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THE

VETERINARIAN;

OR,

MONTHLY JOURNAL OF VETERINARY SCIENCE,

FOR 1838.

VOL. XI.—VOL. VI. NEW SERIES.

EDITED BY

W. YOUATT,

Late Lecturer on Veterinary Medicine at University College; Veterinary Surgeon to the Zoological Society of London, and the Society for the Suppression of Cruelty to Animals;

ASSISTED BY

PROFESSOR DICK, AND MESSRS. KARKEEK AND PERCIVALL.

Ars Veterinaria post medicinam secunda est.—*Vegetius.*

LONDON:

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THE

VETERINARIAN.

VOL. XI, No. 121.] JANUARY 1838. [New Series, No. 61.

ANIMAL PATHOLOGY.

By Mr. YOUATT.

LECTURE XVII.

The Post Mortem Appearances of Rabies in the Dog.—The Tongue.—Sublingual Glands.— Fauces. — Tonsils.— Epiglottis.—Trachea.— Bronchi.—Lungs.—Heart.—Œsophagus and Stomach.

Gentlemen,—I ALWAYS approach this division of our subject—the post mortem appearances of rabies—I will not say with fear, but with a serious and subdued spirit. A fellow-creature has been bitten, perhaps severely lacerated, by a strange dog. The animal was immediately destroyed; and the account which you can get of him while living is exceedingly unsatisfactory, perhaps contradictory. I have again and again heard the owner of a rabid dog, as he was afterwards proved to be, stoutly maintain, and from honest conviction, that there was "nothing in the world" the matter with the animal; and I have seen others, when there was not the slightest occasion for alarm, tormenting themselves with unfounded but distressing fears with regard to their own safety or the welfare of those whom they loved. The carcass is sent to the veterinary surgeon, as the man who, from education and habit, is most likely to be able to decide the question. I will not ask whether he is well instructed in these matters: I will suppose him to be so. Whatever difficulties attend the early stages of rabies, the disease is recognized plainly enough when fully developed. Are the lesions which it produces, the traces which it leaves when life has fled, as easily to be read? In the great majority of cases I answer, without hesitation, yes! There is no difficulty about the matter.

The medical man, however, will often be at your elbow, judging of the dog from what he sees in the human being; and he will

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occasionally express some dissatisfaction at the conclusion which you draw. He has never had opportunity to study or perhaps to witness the group of lesions which, often presented to you, many of them unsatisfactory alone, but continually associated together, force conviction on your mind.

You will not have so much to struggle with as your predecessors had fifteen or twenty years ago. When you have shewn to the surgeon standing by the peculiar appearance of the tongue, and of the larynx, and of the pleural membrane, and of the stomach, you will not be mortified, half insulted, by his addressing you, "Well, sir, and what of all this?—There is a certain degree of glossitis, laryngitis to an intenser degree, an affection of the serous membrane which I have seen a hundred times, and a species of gastritis which, perhaps, I have not seen so often, but in which I do not recognize any thing very extraordinary. I see all these lesions, but not one of them was sufficient to produce death. *Where are the specific lesions of Rabies?*" In the case of the veterinary examiner to whom I referred in the first lecture, there were all these appearances, and the stomach was nearly filled with horrible indigestible matter. Joshua Brookes carried that stomach home, and preserved it in his museum as a fine specimen of the peculiar state of this organ in rabies. The other gentleman stoutly maintained to the last that there was no rabies at all.

You will not at this time of day witness many scenes like this; but to such an extent is it still the opinion of medical men that there are no evident or constant lesions, that you may occasionally be placed in somewhat unpleasant circumstances. My advice to you in such case is, "do not give an opinion too hastily; but, your mind once made up, respectfully maintain your ground. Above all, do not be beaten from this position,—that although in many cases you are at once decided by the appearance which a certain organ presents, yet, in a great many more, you are influenced by the grouping of the lesions, rather than by the intensity of any one of them."

Do I, then, mean to say that it is usually a very straightforward course which the veterinary practitioner has to pursue—that the lesions are so manifest that he who runs may read? With regard to the majority of cases, I again answer yes! but on the other hand, it has occasionally been difficult to decide. It has been a mere inclination of opinion. The history of the case during life has been anxiously inquired into, and even, after all, the case has been somewhat doubtful, and the application of the knife or the caustic has been had recourse to as a measure of precaution rather than of necessity.

During an absence from town of some weeks' continuance, a dog was brought to my house late in the evening. Its death was evidently not far distant, and no judgment could be formed of the nature of the disease either from the inspection of the animal or the history of the case. It was sent away with some trifling medicine, and it died in the course of the night. It belonged to a lady, whose son, a surgeon, discovered that it had slightly bitten his sister on the day but one before its death. He immediately brought it again to my residence, and a careful examination of the dog was made by my assistant, the young surgeon standing by. There was nothing that excited suspicion in the mind of either of them, and no operation was performed, nor was any thing said to disturb the mind of the young lady. A few weeks after my return I was summoned to attend a medical consultation. It had respect to this young lady, who was in a state of high nervous excitation—in fact, she was becoming hydrophobous, and she died. I have no right to condemn either of these young men, except that I think I should have applied the caustic to the wound, in order to make assurance doubly sure: but I introduce this history in order to impress it on your minds, that although, in the vast majority of cases, there will be no difficulty in coming to a right decision, yet a few may occur that present a deceptive character, and that it behoves you at all times to conduct these examinations with much caution, and with a serious impression of the danger of giving an erroneous opinion.

Method of Examination.—In conducting these examinations I have been in the habit of making a free, and continuous incision through the integument from the symphisis of the jaw-bones to that of the pubis. I then throw the integument back on either side, continuing the dissection beneath the scapulæ, and thus exposing the parietes of the abdomen, the whole of the thorax, and the external part of the muscles of the neck. An incision along the linea alba, and a slanting one on each side of the short ribs, exposes the contents of the abdomen. With a stronger scalpel I remove the sternum, and three or four inches of the ribs on either side, bringing the contents of the thorax into view; and then cutting through the trachea a little above its bifurcation, and including the œsophagus in the incision, and separating them from the cellular texture above, and dividing the os hyoides with a stout pair of scissors, I continue the incision round the inner surface of the inferior maxillary bone, until I can introduce my finger, and draw out the tongue between the branches of the jaw. The knife is readily passed round the remaining anterior portion of the inner surface of the jaw, and the

separation of the whole is complete, including the tongue, a considerable portion of the buccal membrane, the pharynx, the larynx, the windpipe, and the gullet. I now commence my examination anteriorly.

The Tongue.—In every case of dumb madness, the unfailing accompaniment of which is paralysis to a greater or less degree of the muscles of the lower jaw and of the tongue, this organ is discoloured and swelled. Hanging constantly from the mouth, more blood than usual is deposited in the anterior and now inferior portion of it. The colour varies from a dark red to a dingy purple, or almost a perfect black. In ferocious madness the tongue is usually torn or bruised, or it is discoloured by the dirt and filth with which it has been brought into contact; and, not unfrequently, its anterior portion is coated with some disgusting matter. The papillæ on the dorsum of the tongue, both the lenticular and the pyramidal, are elongated and widened, and their mucous membrane evidently reddened. Sometimes the injection of the mucous membrane at the base of the papillæ, over nearly the whole of the dorsum of the tongue, is very evident. The lenticular papillæ have occasionally been enlarged to an extraordinary degree, participating in the general inflammation of the dorsum; at other times they have preserved their natural appearance while inflammation has spread around.

The Sublingual Glands, or rather the orifices of the sublingual gland, are frequently enlarged, particularly as they take their course along the frænum of the tongue. The enlargement of these orifices, or perhaps the obliteration of the orifice itself, from engorgement of the terminating portion of the duct, has probably been mistaken in Italy and Greece for the formation of minute vesicles or tumours on either side of the frænum, and supposed to be indicative of inoculation with the virus of rabies. Dr. Maroschetti, and M. Magistal, of Boulay, have favoured the public with a long account of these pustules. They appear from the third to the ninth day after the bite. The mouth must be often examined, for they seldom continue more than twenty-four hours, except they assume a tubercular character, when evident traces of them are left after the death of the animal.

M. Magistal gives a long account of the various characters of these pustules. One species of them he terms the crystalline; they are projecting, rounded, of the size of a hempseed, and contain a limpid fluid. They are seated on the superficies or the inferior surface of the tongue. Others opaque, flattened, about the size of a lentil, brownish, and not transparent. These are found on or near the frænum, or they penetrate into the inferior surface of the tongue.

Of whatever character they are, or wherever they are found, they have been thought to prove that the animal has been infected by the rabid poison. The fluid which they contain is a secretion of the same poison. If the vesicle or pustule is destroyed by the actual cautery, all danger ceases; but if the golden opportunity is lost, the poison becomes absorbed in twenty-four or eight-and-forty hours, and the animal inevitably perishes.

Dr. Urban, in Hufeland's Journal, says, that he was examining some of these pustules, or tumours, in a dog that had been bitten a few days previously, without thinking of some chaps that were on his hands. At about the same distance of time afterwards he began to feel similar pustules under his tongue. He examined his mouth by the aid of a mirror, and he was sure of it. He freely lanced them, and applied the caustic, and he lived to give us an account of his danger and his escape.

These are strange stories, and we dare not discredit them. These gentlemen could have no motive for palming upon us wilful falsehoods, yet by no human or veterinary surgeon has these vesicles been discovered in our country, either in man or brute. I have kept scores of bitten dogs purposely to ascertain the existence or non-existence of these enlargements, and I have never seen one of them. Either the disease takes on this additional character in the south of Europe, or, what is far more probable, obstruction of some of the openings of the sublingual salivary ducts, and consequent inflammation and engorgement of them, have been mistaken for vesicular or tubercular swellings.

The Frænulum Linguæ.—I have never detected the slightest alteration from healthy structure here, whether the frænulum had been left intact, or its folds had been dissevered for the purpose of extracting that tendinous cord, which is termed the worm under the tongue.

The Fauces.—I proceed to the posterior part of the mouth—the pharynx—the musculo-membranous cavity, which is interposed between the mouth and the gullet and larynx. It is seldom that we fail of finding traces of inflammation here. They appear in the majority of cases of ferocious madness, and they are never deficient after dumb madness. It is usually most intense either towards the palatal arch, or the larynx. Sometimes an inflammatory character is diffused over its whole extent, but occasionally it is more or less intense towards one or both of the terminations of the fauces, while the intermediate portion retains nearly its healthy hue.

There is one circumstance of not unfrequent occurrence which will at once decide your opinion;—I mean the presence of indigestible matter, probably small in quantity, in the pharyngeal

bag, and generally near the commencement of the œsophagus. This speaks volumes as to the depraved appetite of the patient, and the paralysis of the muscles of the pharynx; but the present lecture must be confined to a dry detail of facts, without reference to any theoretical opinion of the nature of the disease.

The Tonsils.—Little dependence must be placed on the appearance of the amygdala, or tonsils. They have occasionally assumed double or treble their natural size, and they have evidently been highly inflamed. This has oftener been the case in the quiet than in the ferocious madness. I examine the tonsils with other neighbouring parts, but I place little dependence on the appearance which they present; although I am very much inclined to believe that the insatiable thirst of the rabid dog is intimately connected with disease of them, and deficiency of mucus to lubricate the passage to the throat.

The Epiglottis.—I always look to this organ with much attention, for its appearance goes far to guide my opinion as to the real state of the dog. I regard first its anterior surface—more anterior than superior in our patients—I will call it *the lingual surface,* and then we shall clearly understand each other. The minute vessels on this lingual surface are more or less injected in almost every case of rabies. Sometimes there may be only a few ramifications; at others there is a beautiful net-work of vessels covering the whole of this surface.

There is a connecting band between the epiglottis and the very posterior part of the tongue. Human anatomists speak of more than one of these bands. I can recognize but one in the dog, and which I term the frænum, or frænulum. On either side of it there is a deep depression, which I especially examine; and I scarcely recollect a case of rabies in which very considerable injection of the vessels was not found at the base of the frænum, and deep in this angle. As to the other appearances of the epiglottis, they have reference to the degree of inflammation rather than to the existence of this diagnostic symptom, if I may be permitted so to call it.

The vessels increase in size, and multiply around the edge of the epiglottis; there is thickening of the submucous tissue—there is injection of it on the posterior or inferior—the laryngeal surface. These would confirm the opinion which I was before inclined to form; but, from habit, my attention is first directed to the lingual surface, and particularly to the appearance of the angle on either side of the base of the frænum.

The Glottis.—Inflammation of the edges of the glottis, and particularly tumefaction of the mucous or submucous membrane which covers its margin, are not unfrequently seen, and go far

to account for the harsh guttural breathing which frequently accompanies the dumb madness.

The Larynx.—The same remark may be made with regard to the interior of the larynx. The inflammatory blush that is observed here, the turgescence of the mucous membrane, although existing in the slightest possible degree, and whether confined to the inner edge of the glottis, or extending to the chordæ vocales, or occupying the ventricles—these circumstances are deserving of attention, not as being invariable lesions, but as usually found when the voice is materially changed, or there has been a harsh guttural sound accompanying the breathing. It is true, these alterations of structure must be looked closely after, in order to be found, and, when found, they are often insignificant, compared with their supposed effect. This, however, is nothing new; for after the most careful examination, and with regard to all the diseases of the larynx and the changes of voice, very little proportion can be traced between them.

The Trachea.—The appearance of the lining membrane of this tube will only indicate the degree of inflammation, and not its cause. I have seen it existing in the highest intensity through the whole of this canal,—or the inflammatory blush has died away, at a very small distance from the larynx,—or the trachea has been perfectly devoid of inflammation, although the epiglottis and the glottis have been injected and tumefied to a very great extent.

The Bronchi and Lungs.—The membrane of the bronchi is occasionally highly inflamed, and even the lower part of the trachea may be filled with a viscid or bloody spume. M. Trolliet having observed this in some cases of rabies in the wolf, and one or two in the dog, fixed on the bifurcation of the trachea, and the commencement of the bronchi, as the chosen residence of the disease; and the spot at which the virus is chiefly or solely eliminated. The poison, in his opinion, resides not in the saliva, but in the secretion from this portion of the respiratory canal. I am now conscious of having inexcusably neglected the opportunities which I enjoyed some years ago, of testing many of the opinions entertained with regard to the nature of rabies; but this point I did, to my own satisfaction at least, set completely at rest. For a considerable period, this part was never overlooked in my examination of the rabid dog; and I can truly say, that not in one case out of three did I find any considerable inflammation of the bronchi, and not in one in a score, the viscid and bloody spume which M. Trolliet describes.

In a few cases, however, the inflammation does extend down the trachea, and through a greater or lesser portion of the bron-

chial passages; and I have seen it occupying the bronchi, or portions of them, when there was no lesion deserving of notice in the trachea. In one or two cases, the reason of this excessive inflammation below was sufficiently evident. Portions of hair, or hay, or dung, had, in some act of violent inhalation, while the dog was eagerly or furiously employed in searching among or tearing to pieces substances of this kind, entered the glottis, been forced down the trachea, and become impacted in the bronchi. There was no power to force them back equal to that which brought them there; the membrane of the bronchi would soon become engorged, and inflammation would be set up that would spread through a greater or less portion of the lungs.

Shewing, also, the constitutional affection, the inflammation of the lungs, when it occurs, is usually of equal intensity on both sides of the chest. This is not so in common pneumonia; for although, after awhile, the disease, and especially in overworked horses, occupies both divisions of the thorax, yet at the commencement, in general cases, and often when the disease has far advanced, auscultation denotes a very different state of the two divisions of the lungs. I have the record of one case of rabies, in which this difference is spoken of. "The tongue was swelled and black—the pharynx and larynx inflamed—the ramifications of the distended vessels of the trachea were fully brought into view—the left lobe of the lung was in a high state of inflammation—the right lung scarcely at all affected." I consider this, however, as an exception to the general rule with regard to rabies, for in nine cases out of ten, the inflammation, from the diffused action of the virus, is nearly equal on both sides of the chest. We do not, however, look to the lungs for any decisive characteristic symptom, for these organs sometimes exhibit the intensest disease, the parenchymatous substance being completely broken down; while at others, and even when the larynx had not escaped, the lungs are nearly in a healthy state.

There is one peculiarity, however, about them, namely, the affection of the pleural membrane—the singular patches of inflammation which it presents, varying from one or two inches in diameter to nearly the size of a hand, and curiously marbled and shaded—as often as otherwise confined to one lung, and, however intense a character it may seem to have assumed, yet never accompanied by adhesion or effusion.

The Heart.—A veterinary teacher of eminence used to speak of spots of ecchymosis on the lining membrane of the ventricles of the heart as proofs of rabies. I must beg leave to demur to this opinion. They are proofs of a great degree of previous inflammation—they may be considered as registers of the extent

of that inflammation, so far as it involved the lining membrane, and the texture immediately beneath, but they go no farther than this. Where much fever has attended the progress of the disease, the lining membrane of the ventricles will exhibit the deep hue of carditis, and there will probably be spots of ecchymosis; but in most cases—I speak advisedly—in nine cases out of ten, the heart of the rabid dog will exhibit no other vestige of disease but an increased yet variable deepness of colour in the membrane of the ventricles.

The Œsophagus.—We return to the pharynx, and trace the alimentary canal, which is continued from it to the stomach. When there is much inflammation of the pharynx, a certain degree of redness extends a little way down the œsophagus, and when the stomach is highly inflamed, the lining of the *lower* part of the œsophagus is reddened; but I have never seen an instance in which inflammation extended along the whole course of this tube, while in repeated cases, I have not found the slightest inflammatory blush in any part from the pharynx to the stomach; therefore, except as a matter of curiosity, you may entirely pass over this tube.

The Stomach.—Before you open this viscus you should observe the state of the vessels by which it is supplied; yet they will indicate little more than the comparative quantity of blood that is determined to the stomach, or the degree of inflammation which exists. The turgidity of the vessels will determine the first; the darkened colour radiating from these vessels, and spreading over the base of the stomach, will indicate the latter.

The natural Appearance of the Interior of the Stomach.—You now prepare to open the stomach. You pass a ligature round the duodenum, to prevent the escape of any fluid from the intestines, and you divide the œsophagus and the duodenum, at about an inch distance from the cardiac and pyloric orifices, and then open the upper surface or roof of the stomach, from one extremity to the other. You will now have a full view of the contents, and a partial one of the appearance of the lining membrane.

Caution.—Were I speaking of the state or the diseases of the stomach generally, I should recommend you to take into account the different appearances which that organ exhibits at different times—the almost whiteness, or the very faint pink hue, which is observed when it is in an empty state, and the manifest increase of the still faint pink colour when, containing certain ingesta, a greater quantity of blood is determined to it, in order to enable it to discharge its function. The time that has elapsed since the death of the animal will also be taken into consideration. If the dog has been dead only a few hours, the true blush of inflammation will remain. If twenty-four hours have elapsed,

its bright red colour will have changed to a darker red, or violet or brownish hue. For a few hours the stomach may remain sound, but a process of erosion soon commences, and the mucous membrane is softened, and becomes thinner, and appears as if it were partly eaten through. This is particularly the case in the larger curvature of the stomach. If a longer delay has taken place, there may be absolute perforation of the stomach. You must bear this in mind, and be cautious that you do not attribute that to disease which is the natural process of the cessation of life.

In examining, however, a supposed case of rabies, you are not so liable to be misled as under many other circumstances.

The Contents of the Stomach.—You will first direct your attention to the contents of the stomach. If you find that it contains a strangely mingled mass of hair, and hay, and straw, and horse-dung, and earth—if it contains portions of the rug or woollen bed on which the dog had lain, you would never err if you said at once that he died rabid; for it is only under the influence of the depraved appetite of rabies that such substances are devoured. I would beg to repeat a caution which I gave you in a former lecture. It is not the presence of every kind of extraneous body that will indicate the depravation of appetite connected with rabies. Pieces of stick, or coal, or small stones, are frequently swallowed by puppies labouring under distemper or during the period of dentition. I have found pebbles, bits of wood, coins of various sizes, from a four-penny piece to a half-crown, in the stomachs of dogs that had not betrayed a symptom of rabies. You must not hastily condemn a dog in whose stomach you even find some disgusting matters. I have said, that that beautiful spoiled, ladies' dog, the smaller spaniel, is sometimes one of the beastliest brutes that can be imagined, and will leave every delicacy to gorge on human ordure. It is that mingled mass of straw, and hay, and hair, and filth of various kinds—not human ordure now, for the propensity to devour it seems to have ceased—that must be regarded as proof positive of rabies.

When there are no solid indigesta, there is often found in the stomach of the rabid dog a dark fluid, resembling the deepest chocolate colour mixed with olive, and giving to the mucous coat a yellow brown hue, or a still blacker fluid—as black as the strongest coffee, and occasionally thick and grumous—which stains less, or not at all—the first, probably, being composed principally of vitiated bile, and the second of extravasated blood. I will not say that, without other connecting symptoms or lesions, you would be justified in pronouncing that dog to be rabid, and yet you would not be frequently wrong in so doing. I will say of these, that they are very suspicious circumstances, and require but trifling corroborative proof.

The empty Stomach.—In a few instances, you will find the stomach empty, unstained, and exhibiting a variable quantum of inflammation. Examine the pharynx—examine the duodenum and the jejunum: is there any stray portion of the indigesta which I have described? The detection of the smallest quantity will be decisive—the remainder had been ejected by vomit. Inquire with regard to any previous sickness, and the nature of the matter thrown up.

The Appearance of the Stomach.—It is not often, except when the stomach has been long and much distended by a large and somewhat hardened mass of these indigesta, that one uniform deep blush of inflammation spreads over the stomach. This, and especially if accompanied by erosion, would engender the suspicion of poison rather than of rabies. The inflammation of rabies is of a peculiar character. If not confined to the rugæ, it is most intense there, and particularly on their summits. If it should extend between them, and occupy a portion of the mucous coat below, it is most developed on the ridge, which has a brownish or a blackened appearance. It is confined very frequently to the cardiac portion of the stomach, or it is most intense there. Still, however, I confess that, occasionally, and with the deepest intensity, it spreads over the whole of the stomach. Here and there—found oftenest on the cardiac portion, and almost invariably on the summit of the rugæ—are spots of ecchymosis. I believe that I cannot give them a better name—they are effusions—extravasations of blood into the submucous cellular texture. I have pricked them with my lancet, and macerated the stomach in water, and the greater part of the blood has exuded, and the place has been left almost unstained. They vary in size, from that of a pin's head to a large pea. Mr. Brookes used to compare them to *crushed black currants,* and he could not give a more graphic description of them. Six or eight hours after death there is a central depression in each of them, and this increases to a certain but not great extent.

I have rarely seen a stomach in which there has been considerable inflammation in which they have not been found; and at other times, when the mucous membrane generally has not been at all reddened, and the rugæ deepened in colour in only the slightest possible degree, one or two slight ecchymoses have told me of the state of the animal. From a stomach like this, perhaps, I should not have been justified in peremptorily deciding; but these few and minute spots have turned the scale, before, perhaps, doubtful; and the history, which in process of time has been unfolded, of the mischief accomplished by that animal, has proved, beyond doubt, the propriety of the decision.

[To be continued.]

ON FRACTURES.

By Mr. Friend, *of Walsall.*

Dear Sir,—It was a remark made many centuries since by a great personage, who was reputed the wisest man of the age in which he lived, that "there is nothing new under the sun." Granting this to be true in the abstract, yet there may be so many modifications of matter, and so many different adjustments of light and shade in disposing of the same objects, as to give all the inspiring charm of novelty in working up materials which have again and again been made use of; and there is such an infinite variety in the human mind, that it is quite possible that what has failed to strike the imagination, or to lay hold on the judgment when displayed in all the glowing tints which the hand of a master is capable of, may yet make a desirable impression from the attempt of an inferior artist.

Applying this principle to The Veterinarian, though it is morally impossible that every monthly publication of it can contain absolutely new matter, yet I sincerely hope that it will continue to be supported by sufficient numbers to give it all the charm and freshness of variety, and by as much talent as will make it the living and faithful picture of the progress of the noble profession to which we are attached.

I find it necessary to offer this apology, and I hope that you will not consider that any other is requisite, to introduce the few rambling remarks which I herewith transmit to you.

In the early part of my practice, I have frequently been puzzled to account for sudden fractures in the limbs of horses, under circumstances which did not seem of themselves sufficient to produce them. For instance, I have known many horses, whilst running in coaches on good roads, to fail, all at once, with a broken bone, though there was nothing more to account for it at that particular spot than at any other part of the road over which they had previously travelled. A near relation of my own once lost a very valuable cart horse, who caught his hind toe against a small stone partly embedded in the road, and produced compound fracture of the tibia. This was, at that time, perfectly unaccountable to him and me too. I have noticed, that a great many of these sudden fractures have been of the tibia, one of the worst protected bones in the body of the horse, if we take into consideration that, besides being so barely covered (in parts especially) by muscle, it is just such a distance from the ground as to receive the full force of a kick from a horse who may be good enough to favour his neighbour with one.

I am fully convinced, that none of these extraordinarily sudden cases of fracture, under circumstances not sufficient of themselves to account for them, do occur without previous injury. I have had many proofs of this, and, perhaps, you will admit two or three cases of rather recent occurrence in my practice, that may not only produce conviction of this fact with some of your readers, but act as a beacon by which perhaps a horse may be occasionally saved.

Case 1.—In the summer of 1836, I was sent for to a horse belonging to Mr. J. Beally, Little Bloxwich Hall Farm. On arriving, I found it was a case of compound fracture of the tibia. The history of it was this :—The men found the horse in the morning with a severe kick in the inside of the thigh : this was perfectly evident from both calkings of the shoe having produced wounds ; but as he was scarcely lame at all, they put him to work. He worked some time in a waggon, and then at plough. After going a few rounds at this latter employment, in being turned very suddenly at one end, the bone was displaced, producing that severe laceration of the muscle and skin which was apparent when I saw him.

Case 2d.—This was a horse belonging to Mr. J. Meanly, Daw End, near Rushall. I went to see him on the 8th September, 1837, and was told that the horse was very lame in the hip joint. As soon as I entered the stable, I saw that there was fracture of the tibia. There is a particular appearance of the muscles in the immediate neighbourhood of the fracture that you can scarcely, even at first sight, mistake. From the attempt to support the limb, instead of the body being supported by it, the muscles at that particular spot seem suddenly gathered in, as if by an internal ligature, giving a peculiar break in their appearance, instead of that gradual tapering which is seen in health. I went up to the horse, and on putting my hand upon the inside of the leg, on the spot thus indicated, I found a puncture, as if from the heel of a shoe. I was instantly told that this was not the seat of the lameness, for that he had been kicked there three days before, and had never been lame from it : and, strange as it may appear, this was the fact, till a very short time before I saw him. It was very evident that the fracture was now complete, and that dreadful laceration was produced by every motion of the limb. I had him destroyed, and, on examination, I found the fracture to be an oblique one, of more than six inches in length. This horse had worked three days subsequently to receiving the kick. He was considered to be the strongest horse in the parish, and the day on which I saw him he had been used as shaft horse in a waggon heavily laden with lime ; and the

waggoner, relying on his immense strength, had allowed him to sustain the weight of the load down a very steep bridge, at which he had been desired always to lock the wheel. The consequence was, the immediate displacement of the two parts of the bone, and dreadful lacerations of the muscles.

Case 3d.—This occurred on the 26th of last October, to a horse belonging to Messrs. Mills and Bills, iron masters, Darmalaston. In taking out a large load of iron, the waggoner had turned up a road which (from no warning being given) he was not aware was in such a state (from a water-course being taken up across it for repair) as precluded the possibility of proceeding along it. He could not turn the waggon, and was obliged to yoke the fore horses to the back part of it in order to draw it back again. In doing this, a part of the iron touched the hindmost horse, and he commenced kicking violently. A wound in the thigh was the consequence, and all that the waggoner supposed at that time to be the matter. The horse finished his work that day, and was put to work again on the following morning. The man said he went stiff, but still he was put with others to another load of iron. He did not go far, however, before he was incapacitated from proceeding, and I was sent for. I found complete fracture of the femur; and, after learning the history of the case, and finding that the wound and the fracture exactly corresponded, I decided that it was produced at the same time with the wound. Mr. Mills appeared very much surprised at this; but he called on me on the following day, to say that his servant would bring me the bone, and that, on examination, it was perfectly evident that the fracture was produced by the bar of iron. It was an oblique fracture, as in the former cases.

The record of such cases as these possesses a certain value, if it were only from the circumstance, that, though they were all fatal, they were not necessarily so. Every one of them would have been curable, if placed in the hands of a veterinary surgeon in time. Perhaps you will allow me here to notice a case of this kind that I was called in to on the 28th of August last. It was a mare, belonging to Mr. Foster Bentley, near Walsall. I found, on examination, that there was fracture of the humerus, without displacement of the broken parts. The owner put her entirely into my care, nothing more was necessary than depletion, absolute rest, astringent applications, and low diet, and she perfectly recovered.

I am decidedly of opinion, that in all such cases as those mentioned in the former part of this paper, the bone has, from some previous accident, as a blow or kick, been starred or cracked, though the parts still retain their relative positions, from the

immense power of the periosteum and the fascial attachment of the muscles, &c., and that the exertion subsequently used displaces that which, in reality, had been broken before. I have no doubt but that there are many more cases of this kind of fracture than we are often aware of; and they satisfactorily account for some of those tedious cases of lameness from blows, &c., which, being supposed only to have produced simple contusion, create a wonder in the minds of our employers that they are not sooner cured.

RETENTION OF THE FŒTUS.

By Mr. Cartwright, *Whitchurch.*

23*d June,* 1837.—Mr. Harding, of Little Green, told me to-day that some years ago they had a cow that was bulled, and was expected to calve in the spring following; when, however, that time arrived, she shewed no signs of parturition, either in straining or in the enlarging of the udder, nor could the calf be felt. Being in tolerable condition, she was sold to a butcher, who killed her, and on opening her, found in the uterus a considerable quantity of bones, and the uterus sound.

The same farmer had another curious circumstance occurring at his house; viz. a ewe yeaned two lambs in the spring, and made them fat, and which were sold from her. Towards the following September she was sold to the above butcher, who found in her uterus a quantity of bones, evidently the remains of another lamb.

22*d June,* 1837.—This morning Mr. Allen, butcher, of this town, sent for me to his slaughter-house. When I arrived there, I found he had killed a fine five-years old fat cow, that he had purchased a few days before at Drayton fair, from a Mr. Topham, of Peplow, who had purchased her from a poor neighbour as barren. The uterus contained a quantity of small bones, being evidently the remains of a calf. The whole size of the uterus which contained the bones was about half that of one's head. They were contained in one horn or portion of the uterus, and which was thinner than the other, and was sound: the other portion was quite natural, and thicker. The whole of the bones appeared not to be there, as the greater portion of the head and hoofs of two legs were absent. The length of the scapula was two and a half inches; the longest of the ribs three inches. There was scarcely half a table-spoonful of matter amongst them, and they had not the

least offensive smell; they were nearly white, and when washed, beautifully clean. The hoofs not at all in a decomposed state, and one of them rather impacted in the mouth of the os tincæ, as if it was for escaping, but which aperture was scarcely at all dilated. Of course, it must have been a very young fœtus.

21*st June*, 1837.—I went to see a fine four-years old Cheshire ewe, the property of a very intelligent farmer, a Mr. Cookson, of the Woodhouses. A month or two ago, on shearing his sheep, he discovered that this ewe had not yeaned, and that the lamb was coming out at the bottom of the belly. When I saw her, I found there was an opening about the umbilicus, as large as one could get two or three fingers through, and a little hair was hanging, and matter oozing out. The fœtus could be distinctly felt at the lower part of the abdomen, and seemed hard. I got out, with a pair of dissecting forceps, many pieces of hair and skin, and also one fore leg as far as the shoulder, and a part of another. I could lay hold of other pieces, but could not get them through. I therefore desisted for the present, as I had not proper instruments for extracting it, and promised to see her again in a week's time, when I would bring other instruments with me.

28*th June*.—I this day went again; but found the orifice as nearly as possible closed up; and as she seemed to be improving in condition, we thought it prudent to leave her alone for the present, and see if she continued to gain condition, rather than risk her life by laying open the parts, and having her teazed with flies.

6*th Nov*.—Until within about a week of this date, she had been slowly improving in condition; but within the last week or so, in consequence of there being a good deal of wet weather, she began to decline, and the owner thought it prudent to have her killed, and accordingly I this day saw her opened by a butcher.

Examination.—On the outside, about the opening, the parts were a little thickened, and portions of bones were projecting out and pressing around the orifice, which was as large as one could push one's finger through. The vagina and os uteri were natural and pervious; but immediately anterior to the os uteri, the uterus, for at least a foot, was no thicker than a thin pipe stem, and very similar in appearance and structure to one of the ureters, and would merely admit a probe up it. Anterior to this portion, perhaps for four or five inches, it became wider and more muscular, and divided into two passages, in which were contained a few small bones: from this part the body of the uterus expanded to half the size of one's head (the two short cavi-

to work, and go sound, at the end of a fortnight, after having been fired, and now and then at the end of a week.

The remarks of this gentleman on the act of firing for spavins, on the principle of its producing absorption, are as interesting as they are scientific. That the case is precisely as he states it, my want of science disables me from proving; but should his theory be correct, it is not to be wondered at, that in all my experience of lameness from bone spavin, excepting in its incipient state, I cannot produce relief from firing. But what a beautiful piece of machinery does Mr. Spooner represent this hock joint to be!—its ten bones, its flexible and extensile action. Dr. Paley took his stand, for the existence of an invisible power, on the mechanism of the human body. It is evident he need not have gone beyond the horse.

The remarks of Mr. Spooner on the actual cautery are creditable to him in every respect. He would avoid it when possible. He would prefer the seton, if he could effect a cure by it, because he thinks it inflicts less pain both in the operation and afterwards; "but," he adds, "*when you fire, fire.*" He regards it, as every man should regard it, "as a dernier resort, not to be abandoned, but its just claims to be more carefully inquired into." But, he asks,—and here he excites my admiration and astonishment,—What is the effect produced by the application of the cautery in those diseases in which he advocates it? Why, as it were, a new organization of the part! On injecting limbs that had been deeply fired, he found bloodvessels, venous and arterial, that had never been seen before. The result of this discovery induces him to recommend bold and deep cauterization in bad sinew cases; but, with respect to spavin, he is decidedly in favour of the seton, as, from its long-continued action, most likely to produce good effect. Such was my opinion previously to reading this paragraph; and if spavin be justly characterized by stiffness of action of the hock, its flexible and extensile powers are certainly not likely to be restored by fire. Mr. Sibbald's remark on the wearing of the shoe of a spavined horse is much in favour of this theory of Mr. Spooner's.

Having arrived at the end of the first discussion on this important subject, I shall, with your permission, quit it here, and resume my remarks in a future number.

ON HOCK LAMENESS; IN REPLY TO PROFESSOR DICK.

By Mr. W. C. Spooner, *Southampton.*

In replying to Mr. Dick's very lengthy paper in The Veterinarian of last month, I shall endeavour to do so as briefly as the subject will admit; but, in order to accomplish this, it will be necessary for me to avoid all matters not immediately connected with the question in dispute, otherwise, as Mr. Dick's has been a long one, mine, of necessity, would be longer still, and the readers of The Veterinarian I fear would get tired of the subject. I am sorry to find that Mr. Dick's last paper exhibits so much the appearance of ill-humour; because I should imagine that the end of all parties could be sufficiently accomplished, and the merits of either side fairly placed before the profession, without charging one's opponent with either *self-assurance, obstinacy,* or *ignorance.* Difference of opinion must and will prevail on many points, both in physiology and pathology; and while a discussion on these points may prove advantageous to the profession, yet it is injurious to science and detrimental to the periodical in which such discussion may appear, if it becomes tarnished by the exhibition of rancorous feeling on the part of the disputants. For my own part, I have made no personal charges against Mr. Dick, nor is it my intention to do so. I respect his talents, and I would not undervalue his experience, although I cannot in his last paper admire his good taste.

When a discussion, like the present, is separated by intervening months, the parties who witness it are apt to lose sight in some measure of the immediate subject of dispute, and to allow their attention to be diverted by lesser matters that may crowd themselves in. To avoid this, it will not be out of place for me briefly to recapitulate the argument. My attention, then, was first called more particularly to the subject of hock lameness in the year 1830, when I communicated to The Veterinarian some cases of what appeared to me as disease existing in the upper articulation of the hock joint; and as the appearances I then pointed out had not been noticed by any other writer, I felt that I was only "doing as I would be done by" in making them known to the profession. On reference to this communication, I am not aware that either in its matter or its manner it justly exposes me to the charge of *self-assurance.* As the subject was at any rate novel, I thought it would probably elicit the opinions of other veterinarians, being very anxious to hear them;

and in so thinking I cannot see that I justly incur the charge of *egotism.* No opinions, however, were expressed by other writers. During this time many cases of obscure lameness came under my notice, some of which I had an opportunity of examining after death; and although I cannot assert that I paid critical attention to *every individual nerve, vein, and artery* in the limb, yet I can take it upon myself to say, that I gave the parts such a fair examination as would have satisfied most scientific surgeons. The result of these examinations discovered the lesions I have pointed out, and no others, and many of these cases were related in our periodical. Now, in making these communications I perceive that I have confined myself too much to the bare and meagre statement of facts, and in none of them has it been my object to build up a *fine-spun theory.*

The last of these communications elicits a paper from Mr. Dick, in which he denies *in toto* that any of the cases I have mentioned are cases of disease. His grounds for so doing appear to be, his having found grooves or indentations at the situation I had pointed out, and which appearances he immediately concludes *are exactly alike and in every respect the same* as those mentioned by me. Now, does it not strike the clear-headed reader, that before Mr. Dick takes upon himself to make the many flat contradictions contained in his first paper, he should have better satisfied himself and his readers that we were both arguing on the same thing, and that his *oil-cisterns* and the abrasions I spoke of were precisely the same? But this is not the only instance of Mr. Dick jumping to his conclusions rather too hastily, and drawing his premises from his own imagination, and then reasoning upon them. To shew this I have only to refer to the fourth page of Mr. Dick's last paper, in which he says, referring to myself, "he looks at those cases only where he supposes he will find what he wants." Now, what right has Mr. Dick to make such an assertion? How can he possibly know that my examination has been limited to such cases? In no one of my papers have I given the slightest ground for such an idea being formed. Again, Mr. D. says just afterwards, "But did it never occur to Mr. Spooner that it might be as well to examine a few sound hocks, lest that which he supposes to be disease should turn out, as I have asserted, a healthy structure?" A few healthy hocks, indeed!—why I have examined nearly every one that I have had an opportunity of examining. But surely it is jumping to a conclusion with a vengeance to suppose, much more to assert, that a person must necessarily be ignorant of every thing that he does not state in print. I have made no

observations upon any cases but those with whose previous history I had been acquainted, but it is ridiculous to suppose that I have examined no others. I have in many instances found a slight excavation in the groove of the astragalus, and, though less frequently, on the ridge of the tibia, and the horses to whom such hocks had belonged, I have had no reason to consider lame at the time of death ; but the appearances in these cases have been very different from those I have described, for they presented no *discolouration,* were comparatively smooth on their surfaces, and bore no traces of inflammation, while these appearances have been very striking in the instances I have pointed out. It may be asked, why I have not before mentioned these appearances as existing in the hocks of other horses ? My reasons for not doing so have been because I was not acquainted with their previous history, and because I was not satisfied in my own mind whether they were normal or not. I am free to acknowledge that these notches or indentations may exist without actual lameness; but although this may be the case, yet it does not necessarily follow that they form the natural and healthy structure of the joint, because we know that alteration of structure will often go on to a considerable extent without producing lameness ; whilst, in other instances, lameness may follow a slight alteration of structure, if suddenly produced and attended with inflammation. I have in my possession the hocks of foals a few months old, in which not the slightest indentation on the tibia or astragalus can be discovered ; and among others, in the skeleton of an old horse, no such appearance is exhibited in either hock. It must, however, be borne in mind, that this is not the subject of dispute, for in no paper of mine have I *ever stated,* that a simple indentation on the ridge of the tibia or its corresponding astragalus must necessarily occasion lameness, or even that it constituted disease. Not having made such an assertion myself, I must, therefore, decline the assistance of any one else in making it for me. Nay, I have been rather inclined to believe that these indentations were of a normal character ; but then, be it remembered, they differ in every important characteristic from the lesions I have pointed out. I cannot, perhaps, in this place do better than describe the appearance of some hocks now in my possession, as this will give, probably, some idea of the difference between those attended with lameness and those without it. First, then, I will mention a hock that belonged to a five-year old horse whose previous history I was scarcely acquainted with, but whom I had no reason to consider lame. There is, in this case, an indentation about the middle of the ridge of the tibia, the exact size of which

is represented by figure No. 1; but there is not the slightest discolouration, and the indented spot is covered with cartilage and synovial membrane, though the former might not perhaps be as thick as in other parts of the joint. This hock, together with a few others having a similar appearance, has been in my possession several years, but I never thought of describing it as a specimen of the lesion I have pointed out. Nos. 2 and 3 represent the exact circumference of the abrasion on the ridge of the tibia of two hocks, whose cases I have before described in THE VETERINARIAN. Now, not only are these abrasions considerably more extensive than the indentation No. 1, but there is considerable discolouration; and there is as much difference in the colour of the abraded spots and the other parts of the articulation, even in these dry specimens, as there is between that of a horse of a dark bay and another of a cream colour. The abraded parts, too, are denuded of cartilage, they feel very rough, and have the appearance of spreading. If any doubt be entertained as to the exact correctness of my description, I will readily send the hocks to the Editor of THE VETERINARIAN for his inspection, and indeed would do so now, if a convenient opportunity presented itself. With reference to the figure No. 1, I may observe, that I have seen other hocks (one or two recently) in which these cavities appeared, some of them of a less size, others a trifle larger, than I have here represented, but all unmarked with those other appearances which I have mentioned.

Fig. 1.

Fig. 2.

Fig. 3.

Now, being in possession of these facts, but not quite satisfied whether such cases as No. 1 were normal, one object of my last paper on the subject was to shew, that, even supposing they were normal, yet this fact would not militate against the cases I had described. I, therefore, have mentioned the symptoms that I have met with in cases of obscure hock lameness; and as it was certainly out of my power to open the joint from time to time for the purpose of examination, I have stated what changes we may rationally suppose, on acknowledged pathological principles, to have gone on. In doing this, however, I was guided by the many varieties and degrees of lameness that I had met with, as well as the many degrees of mischief that I had seen, both with reference to the inflammation and abrasion in different hocks. This *fine-spun theory*, therefore, as Mr. Dick pleases to term it, is not altogether unfounded on facts, and, indeed, is similar to the changes that take place in navicular lameness in the fore extremity.

While writing on this point, I must allude to the very off-hand condemnation contained in a communication from an anonymous correspondent in the last November number, who signs himself A. B. He says, "Instead of examining a dozen healthy hocks, and telling us the result, Mr. Spooner proceeds to argue the matter. He supposes a bruise to occur where it cannot possibly occur; and afterwards announces change upon change, as if he had actually seen them every one." Now, we would suppose that such a profoundly logical reasoner as the writer would have us suppose him to be—one who scorns an hypothesis and despises a theory—would at any rate be extremely careful that the assertions he himself makes, and on which he reasons, are at least no otherwise than strict and insurmountable facts. But let us see whether this is the case, when he says, that I suppose a bruise to occur where it cannot possibly occur. He believes, of course, that the parts I allude to do not come in contact with each other. Now, I beg to state that, so far from this being an unfounded hypothesis, I have in many hocks tested it by actual experiment. I have chalked or otherwise marked the ridge of the tibia on its central part; and on pressing it and the astragalus together, even with the limited pressure my hands could exercise (of course, vastly inferior to that displayed by the horse), the marks have appeared in the groove of the astragalus, shewing that the parts touched each other. This experiment I have repeated on several hocks, and whether the chalk, &c. were applied to the astragalus or the tibia, the corresponding result ensued. In those hocks where the lesions of the tibia existed, the chalk would not adhere to the surface of the indentations, but it did readily to the borders of these cavities. The same result that attended this experiment in my hands would no doubt take place in that of others, and should be tried by this profound reasoner, before he again teaches students the way to reason, or, at any rate, before he takes his degrees as Professor of Logic.

With regard to the dozen healthy hocks which this writer says I ought to have examined after Mr. Dick's paper, I beg to assure him that a dozen hocks that are known to have been healthy, are not so easily procured in these parts as he would seem to imagine; but I have not lost sight of what opportunities have come in my way, nor do I intend doing so in future. This writer, however, does not appear to understand the real subject of argument. With regard to whether the lesions I have pointed out are or are not to be considered cases of ulceration, I care not a straw. I will not argue about terms, but will have no objection whatever to consider, if the authorities will have it so, that they are instances of abrasion and absorption of substance,

and not true ulcerations; simply observing, however, at the same time, that their appearance is very similar to that found sometimes in the navicular joint, and there called ulceration.

I must here, however, account for some trifling discrepancies that appear in my account of the same case; one account being in the year 1830, the other in 1837. It unfortunately happened, that, when I wrote my last paper, I had not the volume for 1830 in my possession, having lent it more than a twelvemonth since, and entirely forgotten to whom; accident, however, at length enabled me to find out, but it was only this day, December 12th, that it was returned into my possession. In consequence of this, in alluding to my first case, I wrote from memory, but with the hock before me; and I am not aware of any important difference in the two descriptions. In that of 1830, I have mentioned that, when the lameness first appeared, there was some heat of the skin, but no enlargement about the hock. In saying this, I did not allude to the slight swelling of the integuments that nearly always accompanies increased heat. In my description of the post-mortem examination, too, in my last account, I did not notice the very trifling appearance of exostosis on the bones of the hock which I had pointed out in my first case. This apparent discrepancy clearly shews the fact that this exostosis was so very trivial, as to escape entirely my notice on looking at the hock when I wrote my last paper; but, yet, that my examination of the hock in 1830 was so minute, as to discover, and point out, what any common observer would now on inspection of the joint fail in discovering: it did not in the slightest degree interfere with the joint, or connect any two bones together, and, as I before stated, could not possibly have produced any lameness. I should perhaps have added, with reference to this case, that all external inflammation totally subsided, but that (as I thought would have been readily inferred) the mare continued lame up to the time of her death.

Mr. Dick, in his second page, observes, "that it is somewhat strange, after Mr. Spooner has told us that, on separating *all* the bones of the hock, no disease could be discovered; yet, in the plate you (the Editor) have given, we have the os calcis and astragalus united." This remark of Mr. Dick exhibits, at least, a very great oversight on his part, for the commonest attention to the subject would, at once, discover that my remark alludes to a case in 1830, whilst the plate referred to one in 1837, as is clearly mentioned by Mr. Youatt. This inaccuracy, however, although calculated to mislead our readers, and one that we should hardly have expected to have been committed by Mr. Dick, is yet of no further consequence, because, whatever ideas

Mr. D. may be disposed to gather from the engraving, yet the hock it represents certainly presented no *ossific* connexion between the os calcis and astragalus when sent to Mr. Youatt, which, indeed, he well knows. Mr. Dick, in his third page, observes :—"In the account of *that* case (alluding to the one before spoken of in 1830) no mention is made of the middle protuberance of the tibia having the appearance of being *worn down*, nor are these words used in his July communication; neither does the plate you have given convey any such idea; and I *am therefore persuaded such appearances were not presented in the preparation.*" Now, then, Messrs. Readers of THE VETERINARIAN, I must for a few moments claim your marked attention, and we shall see on what grounds Mr. Dick permits himself to be so persuaded. In the first place I may observe, that the circumstance of my not having the 3d vol. by me at the time will sufficiently account for the same words not being used on separate occasions to describe a similar appearance, and no one will deny that the same appearance can be accurately represented in different language; but, on reference to my paper of 1830, I find that these were my expressions :—"On examining the hock, considerable ulceration was observed on the ridge of the tibia before-mentioned; the *cartilage* on its summit was quite *removed*, and the *bone exposed*, with a *red line* bordering the *ulcerated surface.*" Now, oes not this description convey pretty much the same idea as that of the expression, *the appearance of being worn down?*

Again, with reference to the hock represented by the engraving, Mr. D. is persuaded no appearance of being *worn down* was presented by the tibia in the *preparation*, because the *plate conveys* no such idea. Now this is somewhat like Tenterden steeple being the cause of Goodwin Sands; for Mr. D. will not believe that certain appearances are represented on the tibia, because the plate does not convey it, when the plate itself does not represent the tibia *at all.* But what are the facts of this case? In my July communication I write, "The ulceration on the former bone (the tibia) was at least three-fourths of an inch in length, and nearly half an inch in width, and the cartilage and periosteum were entirely removed on this abraded spot." What, too, says Mr. Youatt's more excellent and exact description :—"On the corresponding central projection of the articular surface of the head of the tibia there was a deeper stain, and a considerably deeper depression. The surface was rough, and the edges were irregular; the cartilage was abraded, and the fibrous structure of the bone appeared beneath." Is it necessary to ask, after these descriptions, whether the expression, "the appearance of being

worn" is not perfectly borne out by them, as, indeed, an inspection of the parts would convince the most sceptical inquirer? If Mr. Dick is altogether wrong in his persuasions with regard to this case, is it not likely that he is equally erroneous in his ideas of the other cases that I have described? The fact is, he has seen indentations in the hocks of horses that might not have been lame, at or about the spot I have pointed out, and from this he has drawn two inferences—the one being, that such appearance was a normal structure (in which he may *possibly* be *right)*; and the other being, that such appearances were exactly similar to those in the cases I had described, in which inference he is most certainly *wrong*.

Mr. Dick says, that it is a libel on the Author of Nature to suppose that one part of the hock is more liable to injury than another; but if this be a libel, there must be a pretty good number of them in the frame both of man and animals, for we all know how much more liable some parts are to disease than others—the navicular joint, the seat of corn, the flexor tendons, and a dozen beside.

It will be unnecessary for me to make any observations on Mr. Dick's allusion to the ignorance of lecturers and writers at this end of the island, as such comparisons have rather an invidious tendency, and can be of no service. Mr. Dick doubts the acuteness of my understanding in not at once comprehending the symptoms of friction, when he said they were quite the reverse of those I had mentioned. Now, to have been quite the reverse, they must have been unlike not in *one* or *two*, but in *every* particular (which I cannot even now consider them to be), otherwise the expression should have been in some or many respects dissimilar, which would have been understood: this, however, is not a material point, although it leaves us in some doubt as to whether Mr. Dick considers friction confined to cases of bog spavin.

I have no space to make any further remarks on the subject of friction, as to whether its effects are mechanical or not; but I must only remind Mr. Dick, that when he says, "he," meaning myself, "has never seen any thing of the kind in the hock, otherwise he would have stated it," he is here again falling into the same error that he has committed on several occasions in his papers, viz., that of searching for his facts in his own imagination, or contenting himself instead with a single hypothesis.

I can but barely allude to Mr. Pritchard's fair and candid paper on the subject of hock lameness in the last October number; and while I must differ from him with regard to the frequency of the cases, I must thank him for his argument, opinion, and

experience. My paper, I find, has extended much further than I had intended; but, in taking my leave of the discussion, I may be allowed to say, that I do so with the same perfect good humour with which, on my part, it was begun—for my object in courting the observations of others has been solely the elicitation of truth; and, I do trust, that what I have written will not be received by the *body of the profession* with that cold-hearted and cynical distrust and criticism, the sure tendency of which would be, if generally exercised, to crush altogether the spirit of inquiry, and confine the fountains of our professional knowledge within the walls of a few public institutions.

CONTRIBUTIONS TO COMPARATIVE PATHOLOGY.

No. XVII.

By Mr. Youatt.

VAGINAL PROTRUSION—DROMEDARY.

Sept. 9th, 1837.—This morning our female dromedary has produced a young one, a female, the period of utero-gestation having been, as nearly as we can calculate, twelve months. Her udder is very much swelled; but she will neither let the little one suck her, nor us milk her. Give her eight ounces of Epsom salts in her water.

The little one is sadly weak, unable to rise, or to stand when raised. Give it from a bottle cow's milk that has been boiled.

11*th.*—She suffers us now to milk her a little. There was from the first a slight vaginal protrusion. It has increased, and is now the size of a double fist. She will scarcely permit us to touch it, and if we press upon it in the slightest degree she turns furiously round upon us. It is absolutely impossible for us manually to return it as she stands, and to cast her would be attended with extreme danger to her, to say nothing of ourselves. Watch the opportunity, and inject, as well as can be managed, a decoction of oak bark, throwing cold water, also, occasionally on the part.

The young one gets very little stronger, and is much purged. It has the small quantity of milk we can get from the mother, and boiled cow's milk, to which let there be added a little prepared chalk and syrup of white poppies. She takes to her bottle very kindly and nicely.

13*th.*—The protrusion is doubly as large as at the last report, and it looks as if extensive ulceration was not far distant. No-

thing can now be injected. Apply the decoction of oak bark externally, and also the effect of strychnine on the sphincters, and, possibly, on the muscular substance of the vagina. Give her half a grain morning and night.

The young one gets a little stronger, but cannot stand to suck, nor would she let it suck if it could. The purging is diminished.

15*th.*—The strychnine is seemingly doing wonders. The muscles of the vagina and the labia are acting, and the tumour is considerably diminished. Continue treatment.

The young one is doing better; the purging is stopped, and we shall save her.

17*th.*—The dromedary and her young one are going on satisfactorily.

18*th.*—The protrusion, although slowly, is progressively receding, and we have but little or any ulceration. Continue treatment.

The young one now sucks for herself, but still has a certain portion of cow's milk.

20*th.*—The protrusion is still receding, but it has, since the last report, become considerably reddened, and ulceration again threatens. Continue the oak bark lotion, and give a grain of the strychnine morning and night.

The young one improves, and, while it continues so to do, no further mention will be made of it.

21*st.*—Very little change.

23*d.*—The retraction of the protruded part, I fear, has ceased. The redness is somewhat diminished. The mucous surface is becoming dry, with small scales of exfoliation. Continue treatment.

28*th.*—The retraction of the tumour has completely ceased; the surface of it has been softened by the application of olive oil; but the colour is deepening, and I fear the approach of sloughing. Our cold applications and our strychnine have been tried long enough; there is no managing her while she stands, and she must at all hazards be cast. We mustered all our strength, and we managed to cast her much better than I expected. I introduced my bare and oiled arm into the vagina, gently pushing the parts before it. This appeared to give her very considerable pain. I was assured that it was nothing but simple vaginal relaxation and protrusion; and when my arm was inserted above the elbow, I could feel the bifurcation of the uterus. I kept my arm in ten minutes, in order to ascertain whether there would be any contraction upon it, or effort to expel it. There was nothing of the kind. I then had plenty of cold water dashed upon the labia, my arm continuing in the vagina. She shrunk

from the cold, and so did I, but I could not feel the slightest contraction of the vaginal substance. I then withdrew my arm as slowly and as cautiously as I could, and the protrusion presently followed just as before.

One resource alone remained. I once more introduced my arm, pushing up the protrusion, while an assistant passed two stitches of brown thread, four times doubled, deeply through the labia, leaving me just sufficient room to withdraw my hand, which, fortunately for this operation, is rather small. The part before protruded again presented itself at this aperture, but was retained by a third stitch also deeply taken, but with much care not to wound this substance, sufficient room being left for the passage of the urine and nothing more. We again doused her well with cold water, and released her. As she stood, the pressure of the vagina against the closed labia seemed dreadful, but we had provided against this by the depth of our stitches. Plenty of cold water externally, but not much to drink.

30*th.*—The bulging is very great, but the stitches do not give way. She passes her urine freely, and feeds well. Still apply cold water.

Oct. 2*d.*—The bulging is not so considerable, and the stitches are firm.

4*th.*—The protrusion is considerably diminished, and the natural folds of the labia are beginning to appear. Let her quite alone.

27*th.*—Two of the stitches have sloughed out; the protrusion has disappeared, and she is doing well.

The young one is growing at a strange rate, and beginning to play about in her clumsy way.

PARALYSIS—JUNGLE FOWL.

Dec. 2*d,* 1837.—This bird, five months old, has been getting, what we are accustomed to call, *cramped.* There is considerable difficulty and evident pain in moving. The bird gets into a corner, and can scarcely be coaxed from it, even to eat. The place is warm enough, and the feeding is not improper. Give half grain doses of calomel morning and night until the bowels are well opened, and let the bird have a little hempseed, and a peppercorn or two within its reach.

4*th.*—Dead. There was no appearance of disease in the thorax or abdomen, except that the large intestines were loaded with food. There was nothing to throw the smallest light on the cause of death, until the spinal cord was examined. There was evident inflammation of the membranes of the lumbar por-

tion of the spinal cord; and the larger intestines, supplied with nervous influence from this portion of the cord, shared in the paralysis of the posterior limbs. The next case of cramp we have, we will pluck away a few of the feathers, and blister this portion of the spine, if so it can be called in the bird.

CHAMELEON.

Dec. 2d, 1837.—This animal had been observed to crawl about, even with more than its usual slowness, for the last week. This is the time when they usually take their departure from us. We have never yet saved one through the winter. Feed him well, and make him as comfortable as possible.

4th.—Dead. This is the first that I have had opportunity to examine, for they have hitherto been sent down to the Museum. The lungs were beautifully sound; perhaps (but this is merely guessing on the matter) they were a little diminished in size. The liver exhibited evident traces of inflammation, and the intestines were loaded with a viscid black matter, seemingly composed of vitiated bile and the natural mucus of the intestines. We will try another time what minute doses of calomel will do when they appear to be thinking of going.

APOPLEXY—CUCKOO.

Dec. 4th, 1837.—This bird had been observed to be rather dull yesterday, but he could not be said to be ill. This morning he was found dead. Every organ of the thoracic and abdominal cavities was in perfect health. The bird was as fat as a pig. I scarcely ever saw one of his size with such a collection of fat within him. On opening the head the cause of death was plain enough: there was great injection of the membranes, with slight effusion of blood over almost the whole surface of the brain, and a small clot of blood at its base. It was plain and manifest apoplexy. Is this the way that several of our cuckoos have gone? Not exactly so, for some that I have had the opportunity of examining have had no flesh upon their bones. This, however, must be more looked after.

NEUROTOMY.

By Mr. Edward Hickman, *Shrewsbury.*

I have before sent you a statement of a few cases of Neurotomy which I operated upon successfully; at the same time pointing out the utility of the operation, when proper cases are selected, and which requires as much or greater judgment than even the operation, which is very simple to those who know the anatomy of the foot. I have seen it, however, attended with serious obstructions from hemorrhage when the tourniquet was not applied sufficiently tight; and I recollect an eminent veterinary surgeon being very much confused and annoyed by the slackness of the pressure, and the great flow of blood occasioned by it, when operating before a royal duke; and in consequence of which I very much doubt whether any portion of the nerve was at that time excised.

Since I last wrote to you upon this subject I have had several very interesting cases under my care, and which I think are worthy of record, and should be satisfactory to the enemies of neurotomy, who seem to be rather numerous, either from prejudice or a deficiency of knowledge of the functions of these parts of the animal. Some will tell you that the operation ought to be rejected because it will render the horse unsafe to ride, and that the limb is quite insensible, although operated upon below the fetlock. To those gentlemen I would say, "Go to the Veterinary College, and make yourself acquainted with the anatomy of these parts." Others will say, "it is only fit for post, coach, or draught horses; and no horse intended for riding should be subjected to it, because he will stumble, and be unsafe to ride after such an operation." In answer to these gentlemen I would say, "Facts are stubborn things."

CASE I.

There are at this time, in this town, several coach and post horses working sound that I unnerved two or three years ago. Mr. Peter Hilton, an extensive carrier, had a large waggon horse, seventeen hands high, which was lame on the near fore leg. He had been blistered repeatedly on the back sinews, had a run at grass for six weeks, and every other remedy that was deemed advisable was tried, but the horse got worse. I was consulted, and I found him to be lame in the foot. I advised Mr. Hilton to have him unnerved, which, after some time, he agreed to, the horse being so lame at the time that it was with much difficulty he walked to the casting-bed. After the operation he became quite sound, and continued to lead Mr. Hilton's team for two years.

CASE II.

W. H. Griffiths, Esq., of this town, had a very beautiful little thorough-bred mare, which his daughter, Miss G., was accustomed to ride, and which was a great favourite. She became lame with the navicular disease; and, after every means that could be devised to cure or relieve her were tried without success, it was determined by the worthy owner to have her unnerved. I operated on her below the fetlock, and she got up perfectly sound; and, after carrying Miss G. quite as safe as before the operation for eighteen months, she again became lame on the same foot. Mr. G. being much disappointed, as I was myself, by the nerve uniting, he was resolved to have another operation. I now unnerved her above the fetlock. She was again sound, and resumed her old station for two years, when she was sold to a lady in Birmingham. This is an excellent case to shew they do not stumble in the way so often asserted.

CASE III.

In May 1833, I was requested to see a horse belonging to A. W. Corbett, Esq., of Sundern Castle, that was lame with the navicular disease: he had been bled in the toe, blistered on the coronet, &c. &c., without effect. Mr. Corbett wished to have him operated upon. I considered it a good case, one leg being only affected. I operated on him: he got up perfectly sound, and carried Mr. Corbett's huntsman for two seasons, and was afterwards ridden as a hack.

CASE IV.

In the spring of 1836 I was sent for to Hawkstone, to examine a chesnut horse, the property of Sir Rowland Hill, Bart., M.P. He had been lame on the near fore foot for six months; was bled in the toe, setoned in the frog, and every imaginable means to cure him had been uselessly tried. I recommended Sir Rowland to have him unnerved, which he agreed to: when the horse was brought out of the stable to be cast, the groom came to me, and said Sir Rowland would sell him for £25. The operation was performed; the horse became sound, and Sir Rowland sold him to a gentleman for a good round sum, far exceeding the £25. He hunted all last winter; and a friend of mine saw him standing at a livery-stable in London last summer, to be sold—price 100 guineas.

I also this summer unnerved a six-year-old horse for Mr. Minton, of Astley, which had been lame for six months, and was

doctored by various men of the old school, who had repeatedly blistered him from the foot to the top of his shoulder. The horse still getting worse, Mr. Minton wished very much for me to purchase him at a low price. I operated on him. The horse got perfectly sound, *and was sold as an unnerved horse* for £40 in less than six weeks after the operation.

These are a few of the many cases submitted to my treatment and care: perhaps I may be asked, why I do not publish the unsuccessful cases? In reply I beg leave to state, that I never had but two; and, for very plain reasons, I never will operate upon a case I consider doubtful or uncertain. If all men were to exercise equal caution, neurotomy could not come into disrepute.

There is one more subject I wish to call the attention of veterinary surgeons to, viz., the law respecting the soundness and unsoundness of horses; it is a point on which veterinary surgeons differ widely. I think there ought to be some rule or law laid down, giving to them full power to decide; and the one I should suggest is the following: that the gentlemen of the Jockey Club should hold a council with some of the most eminent and talented of the veterinary surgeons, such as Professor Coleman, Mr. Sewell, and the Messrs. Field, Percivall, and Youatt; and, conjointly, frame such rules and regulations as would settle and end all the unpleasant and contradictory disputes arising from this fertile source.

THE VETERINARIAN, JANUARY 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

We cordially congratulate the profession at large on the onward progress of the Veterinary Medical Association. There is not a member of it, or of the profession, who will not read with delight the announcement of the noble donation of Messrs. Hughes and Templar, of Calcutta. It is not, however, the amount of money which makes this communication valuable; it is the spirit which animates and unites with us in one glorious cause those between whom and ourselves wide oceans roll. "I wish it were in my power to give you £500 on my own account," says Mr. Hughes. "Go on, and prosper." We thank him as

truly and as warmly as if his donation had been extended to that amount. We should be faithless to ourselves and him if we did not "go on and prosper;" for, except our zeal cools, or we are careless or unprincipled enough to let discord creep in among us, the success which has attended our early labours foretels, without the possibility of disappointment, "the brightening march of science."

We were pleased, on the first night of our meeting this session, to hear the names of seven *practitioners* announced as candidates for admission into the Association. One hundred and twenty-one were previously on our list. Our main strength consists in the increasing number of practitioners. Located on soils and in climates so different as the various districts of our country present,—with such powerful predispositions to health or to disease in our domesticated animals, according to the soil and the climate, the food and the general treatment—the same disease assuming such dissimilar forms, and demanding such different or almost opposite treatment—what an increasing fund of invaluable information might we gradually—rapidly, we would rather say —collect. Interesting facts of this nature would not be merely recorded in a periodical, none of the readers of which might, perchance, animadvert upon them, and establish their truth, or still further elucidate their value, but they would be read before a meeting of practitioners and of students, some of whom would always be found to confirm, or to amend, or to shew the error of the statement. How advantageous must this be to the veterinary surgeon of extensive and, perhaps, peculiar practice, and far distant from those whom he with confidence could consult, or having none to whom he may be able to bring himself to open his mind.

Is there any one of our brethren in the country who will not, in the course of his practice, find the following law, the 36th, applicable to his case?—"Any communication they may be pleased to make in or connected with veterinary science will be gladly received by the Association, *which will*, in return, *debate on any disputed point on which they may wish to have its opinion, and which opinion shall be transmitted to them by the secretary.*"

Beside the knowledge that, if chance or business should lead him to the metropolis, he may reckon upon one pleasant and useful evening at least, would he not see in this ultimate reference a tower of strength, and pursue, with greater satisfaction and zeal, the straightforward and honourable course of his practice?

The practitioners who reside in the neighbourhood of the metropolis, how much have they it in their power to contribute to the welfare of the Association, and of the Profession! Not one of them has ever had occasion to repent of his attendance on the usual nights of meeting. He has been listened to with uniform courtesy by his brother practitioners, and with respect by the students; and he has had the satisfaction to perceive, when he examined the next report, that he has contributed his share to a discussion honourable to the Association and useful to the profession at large.

The subject which was discussed on the first two nights of the present session was one of the most important on which the attention of the Association could be engaged. The essay was written in a plain, unpretending, straightforward manner, and contained many sterling truths; but it so happened that few of the practitioners of considerable standing, who had given life, and interest, and value to former debates, were present, and the consequence was, that scarcely a word was said of the intimate structure of the foot, and the true nature and extent of its elastic and expansive power, or "The principles of shoeing;" but the first meeting was —we will not say wasted, for many interesting observations fell from several speakers, and particularly from the President—the first meeting was occupied by the consideration of *the leather sole.* This is a most valuable addition to the shoe, as Mr. Turner remarked, when the foot begins to be tender, and it is indispensable when disease has progressed to any extent; but, from the effect of the varying contraction and expansion of the leather on the attachment of the shoe to the foot, and the enlargement of the nail holes, and the soundness of the crust—from the *morbid* softening of the sole—and from the tact which is required in the adaptation of the leather, and the equable distribution of the stopping, it never can or ought to come into general use.

At the commencement of the second meeting, Mr. Turner favoured the Association with some remarks, as his always are, exceedingly valuable, after which commenced the praise of another shoe, highly useful in its way,—*the tip*—which may be worn without injury by some iron-footed horses, but which cannot in a general way, afford sufficient protection to the foot on our modern roads. The consideration and the eulogy of this shoe occupied the remaining part of the second evening.

These two debates were, after all, very instructive, and will be read with a great deal of pleasure; but they did not assume the character which they would have done had half a dozen practical and scientific men been present. The general question of the foot of the horse would have had that consideration yielded to it which its paramount importance demanded. Some interesting but brief illustrations of the subject were given by the President and Mr. Turner, but the proper character and tone was not given to the discussion of such a question.

The practitioners residing in the metropolis and its environs would pleasantly and usefully spend those evenings which they could contrive to devote to the Association. The theatre in which it is held is somewhat distant from the habitation of most of us, and the road and the access to it are not the most delightful; but our friends should recollect how much the character and improvement of our profession depends on the nature and worth of these meetings. We stand committed before the public generally. We have won to ourselves some honour. The meetings of the last session were highly creditable to us. Neither friend nor foe expected that they would have assumed so high a character. Do not let us fall back, but, in the language of our zealous friend far away, let us say to each other, that we will go on, and will deserve to prosper.

May the Editor be permitted to ask a favour of his veterinary friends every where? Will they kindly, and, if convenient, by or before the middle of January, give him a detailed account of practices, or modes of management, or general treatment, of the horse, cattle, sheep, swine, and, in fact every domesticated

animal, or even going beyond them and embracing all living beings—every mode of management, or general or occasional treatment, which they consider to be inconsistent with true humanity? And also—so far as may be—the different and more humane, and, perchance, more profitable mode of treatment which they would recommend. If letters should come, filled double, from every reader of THE VETERINARIAN, he would be the more thankful. The particular object—not connected with THE VETERINARIAN, but a good one—they shall know at some future period, and honourable mention shall be made of their kindness.

At the same time, the Editor would hint, that communications intended for THE VETERINARIAN, are at this period of the year doubly welcome.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

DE LA MORVE ET DU FARCIN CHEZ L'HOMME.—*Of Glanders and Farcy in the Human Being. Par* P. RAYER, *Member of the Royal Academy of Medicine, Physician to the Hospital de la Charité, and consulting Physician to the King.* Paris: chez J. P. Bailliere.

THE attention of the French medical men and veterinary surgeons has lately been directed to this subject—the possibility of the communication of glanders and farcy from the horse to the human being,—a fact, as Dr. Rayer very properly states, "is of rare occurrence, unknown to most practitioners, and the possibility of which is yet denied by veterinary surgeons of great experience."

A groom who had been attending on a glandered horse, subsequently exhibited what were supposed by some to be very similar symptoms, and died; and the same morbid lesions as in a glandered horse were found in him. The affair excited a great deal of interest, and the question as to the real nature of the disease was discussed in the Royal Academy of Medicine, on three consecutive nights. There was difference of opinion between the practitioners of human medicine. Dr. Rayer fought in the ranks of those who advocated the possibility of this transmission,

and the identity of the disease in the quadruped and the biped. He was supported by some veterinary surgeons; but the opinion of the great majority of these gentlemen was, that this transmission has never yet been proved to have taken place, and, in point of fact, is impossible. This is a very natural and almost necessary consequence of their belief that chronic glanders, at least, is never contagious.

Dr. Rayer was not content with what he had said and done at the Academy, but he has published a work on the subject, interesting, on account of its research, and the facts which his intimacy with MM. Dupuy and Leblanc has enabled him to adduce; and he maintains that, under certain conditions and susceptibilities, not only glanders may be communicated by *contagion* from the quadruped to the biped, but that the occasional *infection* is far from improbable.

Dr. Rayer first enters into the history of this disease, or of affections that have been mistaken for it. There is no satisfactory proof of its occurrence until some years after the commencement of the present century. Professor Waldinger, of Vienna, in the year 1810, advises his students to be very cautious in examining the carcasses of horses that had died glandered and farcied, because serious accidents, and even death, had resulted from inoculation with the matter of glanders.

In 1811, Dr. Lorin, principal veterinary surgeon to the first regiment of Carabineers, says that a veterinary surgeon was attacked with considerable inflammation of his fingers, in consequence of having pricked himself in operating on a farcied horse; and that, after having employed emollients without effect, the little tumours which were forming were extirpated, and the wounds washed with turpentine; after which the patient speedily got well.

Dr. Weith, another veterinary surgeon, says that, in dissecting glandered animals, or when the matter of glanders is received into the eye, there is *sometimes* violent inflammation of the fingers or the eyelids.

In 1817, M. Sidow, a military surgeon at Dusseldorf, published it as his opinion, that glanders is communicable from the horse to the human being; and he appeals to his own experience, "*for*" says he "*some students having pricked themselves with the matter of glanders, have had ulcers of a bad character.*"

In 1821, M. Schiller, Professor Naumann, of the veterinary school of Berlin, and the Assistant Professor, M. Holbach, having been interrogated as to their experience relative to the transmission of glanders from the horse to the human being, replied that they knew not any case in which a glandered horse,

while living, had communicated any disease to the human being: that in the infirmary, no veterinary surgeon, or other person attendant on glandered horses, had been infected, but that malignant inflammation, and sometimes followed by gangrene, had supervened when the hands had been pricked in the dissection of glandered horses.

M. Dietrich, another veterinary surgeon, and about the same time, equally denied the communicability of glanders from the horse to the human being, acknowledging, however, that he had seen some persons who, having wounded themselves in the dissection of glandered horses, had become ill, the wound assuming a gangrenous character, and death speedily following.

Hitherto, then, there is not a case which would justify the suspicion of communicated glanders. We have merely an account of that constitutional and malignant irritability which too often, in our hospitals, follows inoculation with some mysterious animal poison, derived occasionally from the dead body, and without certain connexion with any particular disease. There is nothing more than happens continually in our medical schools, and has happened from time immemorial, and where no dissection of the horse, glandered or not glandered, would take place in a dozen years.

A medical gentleman, however, lately returned from walking the French hospitals, has thought proper to say that Dr. Copland "is poor in his article on human glanders," because he does not refer to these unsatisfactory cases. We can justly appreciate, and highly admire the zeal with which the student identifies himself with and defends the reputation of his instructor; but let not that zeal border on rashness, and let him not endeavour, for there he would assuredly fail, to found his own preceptor's fame on the erroneously asserted mental poverty of another. Dr. Copland alluded not to those cases because they did not necessarily bear upon the point in question: and what does Dr. Rayer—whose research this gentleman is lauding at the expense of Dr. Copland—what does he say? "The first positive and well-characterized case of acute gangrenous glanders in the human being is related by Schilling." What does even this writer say in his translation from Rayer? The first positive observation regarding this disease (*La première observation, positive et bien caractérisée!*) was published by Schilling, veterinary surgeon (?) at Berlin." For our own parts, we have ever been accustomed to regard Dr. Copland's not only as a rich and inexhaustible store of observation and truth, but as an example, scarcely equalled, of skilful condensation, and we applaud him for omitting that which would not illustrate but encumber his subject.

The first recorded case of the transmission of this disease occurs in Rust's Magazine, published at Berlin in 1821. "A groom employed in the veterinary school in that city, having been accustomed to wash the nostrils of a glandered horse, fell sick. Red streaks were observed on his cheeks, and a red spot on the ala nasi. On the next day this spot had increased to a livid vesicle, and the whole nose, eyelids, and face, were swollen, hard, and of a dingy yet shining red. Many livid vesicles, of the size of peas, and with *very hard* bases, were on the following day seen on the nose, and the integuments around were much indurated. On the fourth day the tip of the nose was gangrenous—the upper lips beset with vesicles, *and an offensive corrosive discharge was taking place from both nostrils.* On the fifth, the whole nose and upper lip were gangrenous, and pustules like the others rose on the forehead. On the sixth day, more pustules arose on the forehead, and the nose and upper lip were black, and cold, and senseless. On the seventh day, red spots, quickly suppurating, rose on various parts of the body, *particularly the fore arms and legs;* the nose was nearly stopped up, the discharge from it mixed with blood, and so corrosive as to destroy a portion of the slough of the upper lip. On the eighth day livid pustules were numerous over the body, and nearly the whole of the face was gangrenous.

"The pericranium, and especially of the frontal bone, was sown, as it were, with yellow pustules (tubercles?) of the size of millet seeds, and the bones below were sound. The bones of the nose were decidedly carious, while the other bones of the face were sound. Under every part of the skin, where the earliest pustules took place, the cellular membrane was changed to a gelatinous mass. Pustules (tubercles?) were found in the substance of the muscles, projecting, as it were, from their fibres, and containing a puriform lymph, but not clustered like those on the head. The fibres around were half liquefied." This case is stated at length, because it is the first detailed one on record of glanders and farcy (for we have both of them here) in the human subject.

Cases now rapidly increased. Many of them had, probably, long before, occurred, but it was not until this period that their true nature began to be understood. We will relate only a few of the melancholy histories which Dr. Rayer has with great industry collected. To some of them we must demur, as presenting the characters of some other animal poison than glanders; but feel considerable interest in others, because the disease originates from one of our patients, and because the victims of it have been, with very few exceptions, veterinary surgeons, or those who have had the management of horses.

In 1821, a horse belonging to the Badsworth hunt, in Yorkshire, died of glanders. One of the helpers in the kennel had orders to cut up the carcass. In accomplishing this he accidentally wounded himself in the hand. A few days afterwards he became ill, and exhibited all the symptoms which attend the commencement of glanders in the horse. He daily became worse and worse, and at length died in a delirious state, but of confirmed glanders. This case, however, did not make much impression, for no symptoms, no post-mortem appearances are stated; the opinion of no veterinary surgeon is given, and the account although so far authenticated as to bear the signature of a medical man, was extracted from a newspaper.

The next case, in order of time, was that of an exceedingly promising veterinary student. It shall be stated somewhat at length, for it has not yet appeared before the public in its true light. It was that of Mr. William Turner, a younger brother of those excellent practitioners and contributors to veterinary science, Messrs. James and Thomas Turner. Various conversations with the former of these gentlemen had put the reviewer in possession of the real facts of the case, and had led him to adopt, to almost their fullest extent, the opinions of both of them, and particularly of Mr. James Turner, with regard to several singular and interesting circumstances. He has since communicated with Mr. Turner, and the sentiments of that gentleman are unchanged with regard to the main facts, their nature, and their connexion.

In the begining of 1821, various experiments were instituted at the Veterinary College with regard to the contagiousness of glanders and other diseases. An ass was inoculated with the matter of *strangles*, taken from a four-year old horse, otherwise healthy. The pus was well rubbed on the Schneiderian membrane, and the skin was punctured beneath the jaw. Nothing resembling the characteristic tumour of strangles followed, nor was there any pustular eruption on any part of the face or throat; but a defluxion from the nostril ensued, resembling the extremest state of catarrh. There was an immense discharge of purulent semi-concrete matter, mechanically obstructing the respiration through the nasal and other passages, and producing a laborious, stertorous breathing. The animal was threatened with suffocation every moment. In a few days, however, this degenerated into evident glanders, and the animal died. The post-mortem appearances left no doubt of the nature of the malady, into which this violent catarrh or ozena had degenerated.

It so happened, that William Turner prepared the head of this ass for the examination of the Professor. It was a mere matter

of chance that it fell to his lot. In order to bring fairly into view the nasal, and frontal, and other sinuses, he had to saw the head asunder longitudinally. In doing this he scratched one of his fingers against the edge of the bone ; so trivial, however, was the injury, that he was not until some time afterwards aware that he had cut himself.

About eight hours after the receipt of the injury he felt himself unwell—he had head-ach and chilliness. On the following morning he felt a slight glandular enlargement in the axilla on the side opposite to the wound, and then, first of all, he began to think of his injured finger, and to feel inconvenience from it. On examining it, a little black pustule presented itself, with evident inflammation of the absorbents passing over the back of the hand, and extending up the arm. His friends were naturally alarmed, and he was very soon the patient of Mr., now Sir Benjamin Brodie. Abscesses afterwards formed in the other axilla, and also on the lower part of the back. His knees were one after the other similarly attacked,—suppurating tumours occurred on various parts of his body, and scarcely any portion of his external frame escaped. He gradually wasted away under this universal and destructive disease, and died, fifteen or sixteen months afterwards, a perfect skeleton. Although, as has been stated, every limb suffered in its turn, *there was no disease of the face or the head, no discharge from the nostrils—the countenance was unchanged, except that it was strangely attenuated, and the intellect was unimpaired to the very last moment.* The serenity and proper feeling with which he awaited the departure of life will never be forgotten by those who were at his bed-side.

This is an interesting case, and deserves much consideration. The ass was inoculated with the matter of *strangles*, and that taken from a young horse that was in other respects apparently sound. The matter was rubbed on the membrane of the nose, and inserted beneath the jaw. No tumour appeared in the usual place of strangles, but there was a profuse discharge of purulent matter unnaturally thickened, *semi-concrete*—almost suffocating the animal as it escaped. *We cannot doubt that this was strangles;* but instead of the inflammation taking place, as usual, in the subcutaneous cellular tissue beneath and between the jaws—instead of the purulent matter that was to be discharged from the constitution pursuing its usual route, it is, by the friction which had been used on the Schneiderian membrane, and the irritation of the poison rubbed in there, determined to this part. It is still essentially strangles; but its seat is the nasal membrane instead of the subcutaneous tissue between the branches of the lower jaw.

The matter discharged, however, is so profuse, thick, and annoying, that the animal suffers severely from it: it is a kind of suffering which nature never designed him to endure,—she speedily begins to be debilitated by it, and that process takes place—that change of seat or character in the disease, or both of them, of which the human practitioner sees little—the extent of which in the solipede he can scarcely credit, but of which the veterinary surgeon has too frequent proof—glanders, the natural termination of every disease of the horse, breaks out, and death is not far distant.

But the unfortunate youth whose health and life were destroyed by this inoculation, what shall we say of him? In a few hours after the accident he feels chilly—head-ach comes on—a swelling—singularly enough—appears in the opposite axilla—and then he first begins to think of the wound, which is becoming inflamed with red lines proceeding from it up the arm, while tumours and abscesses appear on various parts of his frame. His friends and his preceptor naturally institute certain experiments. Professor Coleman inoculates an ass with the matter taken from one of the ulcers, and the animal died glandered. Mr. James Turner inoculates two asses with the same matter, and both of them died glandered. There was no failure in either of the experiments, as Dr. Elliotson states in his excellent publication on this subject. Seven or eight months had elapsed before these experiments were made.

The poor youth still continuing to fade slowly away, Mr. James Turner, two months afterwards, resolved to institute another experiment. He had a valuable two-year old healthy colt; he inoculated him with matter from one of the abscesses. The matter was applied in the same way as to the asses—it was rubbed on the Schneiderian membrane—it was inserted beneath the jaws—the edges of the nostrils were pared, and the virus well rubbed in, and punctures were made on the inside of both arms and thighs. Strange to say, no effect was produced. The youth still wastes away, and, at length, dies without one trace of glanders about the nostril or the face—without the slightest nasal discharge,—and with his mental faculties unimpaired.

Was this a case of glanders? *The strong inclination of our opinion is, that it was not.* The time when the constitutional affection was first perceived, so early as eight hours after the infliction of the wound—the inflammation first shewing itself about the axilla, although it was the opposite one—the slight affection of the wounded part, which, in point of fact, had not been examined or recollected until after the tumour in the axilla had commenced and progressed—these look more like the constitutional disturb-

ance occasioned by wounds in dissection. It is precisely the history of the commencement and progress of one of these cases.

But the animal whose head he was preparing, and by a spicula from which he was wounded, died glandered. That might or might not have influenced the form and progress of the disease; for usually the infection and all its fatal consequences seem to have no connexion whatever with the nature of the disease of which the person dies: it occurs, and with the same symptoms, after diseases of the most opposite character; is influenced only by the progress of time, for, when decomposition commences, this poison ceases to have existence.

The disease of the three asses was undoubtedly glanders: but these animals died much after the usual period that intervenes between the inoculation of the ass with the matter of glanders and his death. In Mr. Coleman's case, the ass died on the twelfth day of the experiment. In both of Mr. Turner's cases a fortnight or more elapsed: there was sufficient time for the diseased purulent matter to take effect, and to debilitate the constitution, and for glanders, as in many other cases, to supervene as the winding up of all.

Two months afterwards he inoculates a colt with other matter taken from the same patient. He spares no labour to secure the effect of it, but the colt is uninjured. This could not result from the matter of glanders having lost it poisonous property, for we have many records of animals being infected by the virus taken from the dead subject; or of there being an immunity in this colt against infection from the virus of glanders, for of this we have not a record on our books; but it arose from one of two things—that the pus secreted in these abscesses, and not being of a glanderous nature, had somewhat changed its properties, or that the colt had too sound and unimpaired a constitution to be affected by this source of irritation and disease.

We are perhaps trespassing on ground that should be occupied by others. The review of Dr. Rayer's valuable work shall be continued in a future number. Y.

Extracts.

Cases of Difficult Parturition.

By M. G. Canu, *Thorigni.*

Many authors have treated in too succinct a manner, and others have omitted entirely, the mention of certain obstacles to parturition in our domestic quadrupeds, whether dependent on the unnatural situation of one or more of the limbs of the fœtus,

or on its malformation. In human medicine, the art of midwifery is treated of at proper length, and particulars of the smallest importance are minutely detailed; while in numerous works every desirable information is given with regard to this essential part of surgical treatment. In veterinary medicine it is not so, and scarcely one of our best authors has devoted a dozen pages to it, while many scores are wasted on mere generalities; and the student who could have recollected that which he had seen at his school, but has only an indistinct remembrance of what is so lightly passed over, is often placed in a situation of much embarrassment, and has the mortification to see the unlettered practitioner of the village consulted and employed, while he is rarely employed; or when he is called in, he has as little confidence reposed in him as, unfortunately, he is enabled to repose in himself.

Being placed in a breeding country, and having met with various cases more or less difficult, I would beg to relate a few of them. They may be useful to others, and they may lead to a different and a better mode of instructing the pupil.

I will first refer to the presentation of the two anterior members of the fœtus, and the impossibility of raising the head and placing it in the natural position. We are then obliged, in order to save the mother, violently to pull at these limbs until we see the shoulders and the neck appearing in a mass, while the head of the fœtus is bent back and impacted in the flank. This position often depends on an unnatural formation of the fœtus, the neck being turned backwards, and the head convex on one side, and flattened or even convex on the other. If, after the birth, we endeavour to place the head in its natural position, we shall see it turn again upon the flank, and rest closely upon it. M. Delafoi, sen., advises to pass a cord round the curve which is formed by this unnatural position of the head, and as near to the head as possible, and to give it to the assistants to pull, while he thrusts back the chest into the womb; and thus the head is occasionally brought out, and the birth effected. When I have been enabled to reach it, I have passed the cord around the lower jaw. When I have been unable to accomplish this, I have taken an iron instrument, two feet in length, having a ring at one end and a blunt hook at the other. I have implanted the hook in the palate if I could, or, if not, in one of the orbits, and I have kept it fixed there with my hand, while an assistant has forcibly pulled a rope attached to the ring, and the curve has unbent itself, and the head has been drawn out. I have thus saved many calves and colts, and even without essentially injuring the organs to which the hook was applied. These

means should be employed whenever there appears to be a chance of bringing back the head into its natural position; but oftenest, and it is of that which I would chiefly speak, it is impossible to introduce even a finger between the neck and the body of the fœtus. The fœtus must then be drawn out in the position in which it is found, or recourse must be had to a cutting instrument. Will it be prudent to free the passage, in some measure, by detaching the shoulders one after the other? I think not. How shall we, after that, be able to act upon the fœtus? Where will be the *point d'appui?* Will it be possible to cut through the muscles at the base of the neck, and to disarticulate the last cervical vertebra, or the last but one, in spite of the violent and reiterated struggles of the mother, especially after she has suffered much from our previous attempts to deliver her? I do not think that this could be done. It would be better to adopt the course recommended by M. Thibaudeau (*Recueil, No. de Mars* 1831): to remove one of the fore limbs entirely—to cut through the costal cartilages—to open the chest through its whole length, and to extract its contents. By this means the ends of the ribs will overlap each other, diminishing the volume of the fœtus, and facilitating its passage, notwithstanding the resistance offered by the bent neck. I am grateful to M. Thibaudeau for teaching me this mode of proceeding. I had no idea of it, when occasionally I have exhausted myself in useless efforts to accomplish the parturition, and when, in two instances, I was compelled to draw out the fœtus by main force in the position in which it had presented itself. It was an extreme measure, to which I was exceedingly repugnant; and I acknowledge that it may well appear a rash one to the majority of my veterinary brethren.

Case I.—On the 1st of May, 1831, I was sent for by M. Isabel, of Precorhain, to see a mare that for seven or eight hours had been vainly attempting to foal. The fore legs were well presented, indeed they had been drawn down; but when it was observed that the head did not follow, the assistants had ceased to pull at them. It was a strong mare of about seven years old: she was continually straining—she was completely covered with perspiration, and appeared to be very much distressed. I introduced my arm, but I could not find the head; a hard round mass closed the entrance into the pelvis, and compelled me to withdraw my hand. Shortly afterwards, however, I made another attempt with somewhat better success. I introduced the whole length of my arm, and following the direction of this body, I at length touched the tip of the ears with the extremity of my fingers. In vain I endeavoured to change the position of the

head, or to turn the neck in the slightest degree. I could not introduce my fingers between it and the shoulder.

I then warned the owner that he must not reckon upon the foal, and that the mother was in imminent danger. Not seeing any method of saving her but by extracting the foal by force, I proposed to attempt it, and, having obtained his consent, I fixed a rope on the fore limbs that were presented, and at which three assistants were to pull—two others with a girth placed between the thighs held the mare, who was lying down. I then ordered the assistants to begin to pull, and, after the exertion of all their strength, the fœtus was extracted dead, with the neck bent on the ribs. We attempted, but in vain, to place the head in its natural position—the right side of it, flattened and even crushed, perfectly fitted a concavity in the right flank.

The vulva was a little torn at its superior part: it was much swelled, and its lining membrane was of a violet colour. The mare lay three days before she attempted to get up. Venesection, —spare diet—gruel, in which nitre had been dissolved—injections, and the application of a bran poultice to the loins, were the means adopted. The vulva and vagina were bathed first with a decoction of marshmallows, and, afterwards, with one of bark—large sloughs were gradually detached from them—a slight scissure remained on the superior part, and, for a long time afterwards, a white purulent fœtid matter was discharged from the womb.

It subsequently appeared that, although she was no less than seven years old, her croup had changed its form: previously it was a little depressed, and the attachment of the tail was low. The ligamento-cartilaginous substance which had united the sacrum to the os innominatum had been partially torn, and the croup had approached almost two inches nearer to a horizontal position. The owner, contrary to my opinion, thinking that she would no longer be fit for breeding, sold her to a neighbour, to whom she afterwards brought two good colts.

Case II.—*Feb.* 12*th*, 1832. A strong draught mare, five years old, but that had been blind from a year old, belonging to M. Gillet, of Giesville, had been making violent efforts to foal during more than three hours. When I arrived, the farmer and his people had been attempting to assist her, and the fore legs had been brought almost half way out. I introduced my hand, and found, as in the preceding case, the rounded mass, firmly closing the entrance to the pelvis, and, after forcing my hand onward, I could just touch the poll of the fœtus. I attempted, for more than a quarter of an hour, to push the body back, and to replace the head and neck in their natural position; but in

vain. I then proposed to the owner to attempt to save the mother by extracting the fœtus in the position in which it presented itself. Four assistants were sufficient to accomplish our purpose, and no accident occurred. A few hours after parturition she got up, and in fifteen days was sent to her usual work. This colt, like the other, had its neck turned backward, and its head flattened on the flanks. It died a few moments after its birth.

Case III.—*Dec.* 17*th*, 1830. M. L. Hebert, of Saint Louet, seeing one of his cows, four years old, straining to calve, drew forward the fore-legs, which were beginning to present themselves. Observing that the labour did not advance, he soon ceased to interfere. An instant afterwards, however, the efforts of the mother being redoubled, he tried again to assist her, but without effect. The fore legs were now more advanced, but the head did not appear, and, on introducing his hand into the vagina, he could not feel it. He then started for me, forbidding his servants, in the mean time, to do any thing to the cow. They obeyed his directions, and contented themselves with looking at her now and then. We arrived in about an hour and a half, and were told that we should find her in the same state, for they had seen her not a quarter of an hour before. On entering the stable we found, to our surprise, a calf yet living lying behind her, which she had produced without assistance, and whose head and neck were bent upon the right side of the body. It lived only two days, and in three or four days afterwards the cow was apparently as well as ever.

Case IV.—*Feb.* 11*th*, 1834. M. Roquais, of Conde-sur-Vire, sent for me to look at a heifer that was unable to calve. She was in good condition, healthy, and had gone eight months and six days of her time. As in the former cases, the fore legs alone presented themselves. The beast was straining violently, and sadly tormenting herself. I soon recognized this bending back of the head, and the extreme difficulties which such a position presented in a heifer. I abstracted ten pounds of blood, which did not in the least diminish the frequency and strength of her pains. I again introduced my arm, and could just feel the base of the ear. I attempted many times, but in vain, to pass a cord between the neck and the body of the fœtus. I tried to turn the head, in which I did not think there was any malformation, but without success.

My colleague and friend, M. Le Peu, having come to pay me a visit on that day, I went in search of him, thinking that his arm, longer and stronger than mine, might give a more favourable direction to the head. After several efforts he did change

the position of it, which assumed that of a horse that lowers his head and bends his neck to avoid the action of the bit (*un chéval qui s'encapuchonne).* We were then enabled to fasten a small rope round the lower jaw ; but it was soon detached, and brought away with it the extremity of one of the branches of the jaw. I then fixed one of my crochets in the orbit of the eye; but we made no progress.

The vulva was now much swollen, and of a deep red colour; the passage was considerably diminished, and our patient exhausted. We determined on embryotomy.

I detached the skin from above the knee to the inner face of the sternum, and thence to the shoulder. I cut out a considerable portion of the sterno-humeral and sterno-sub-scapular muscles (the pectoralis transversus and pectoralis parvus), and then drew out the limbs, thus prepared, and easily detached them from the thorax.

The crochet remained implanted in the orbit, and was now very useful to me. I fixed another under the cervical ligament, and after many efforts the head presented itself. We then placed a cord round the neck; but we were obliged to exert very considerable force ere we could bring out the chest, and, afterwards, the croup. The calf was large with relation to the pelvis of the mother. The head was well formed, but its position had been unnatural.

The mother now claimed all our care, and proper measures were pursued. On the following day she found her way into the stable in search of food, and yielded on the same day nearly a gallon of milk. The lips of the vulva were very much swelled, and so they continued on the morrow, although they had been diligently fomented. She then appeared to be doing well, and it was agreed that she should soon have a little hay; but on the third day she was dull and feverish ; her teats were become flaccid, and yielded no more milk—the vulva was still more swelled, and exhaled a putrid smell, and on the following day she died.

We examined her after death, and found the uterus very much inflamed; its parietes were more than an inch in thickness; and the submucous cellular substance was infiltrated by a yellow serosity. There were several large gangrenous patches in the vagina.

Case V.—*May* 1*st*, 1831. M. Acelot, of Pontbellenger, sent for me to a mare that had been four hours in labour. She was ten years old, small, very fat, and had previously produced several good colts. She was very much exhausted, and covered with perspiration; yet her pains continued without intermission.

Both the fore and the hind legs presented, and to an equal extent, namely, almost to the knees and the hocks. When I introduced my hand, one of the throes of the mother would repel it in spite of me, and the entrance into the pelvis was entirely closed by the fœtus. This was the first time that I had met with such a case, and I was very much perplexed. I attempted, long and fruitlessly, to return the fore extremities, and bring the hinder ones farther down, and then to return the hind extremities and bring the others farther down. More than half an hour passed in this laborious work, and I had almost determined to have recourse to embryotomy.

I however tried one manœuvre more. I fixed a rope on each of the hind limbs, and confided it to my assistants. I then, with both hands in the vagina, seized the fore legs above the knees, and endeavoured to bend them, and to push them backward. At the same time, my assistants exerted their strength at the hind legs, and I had the pleasure to see the croup gradually advancing, and the fœtus was abstracted, all four legs presenting at the same time, but the fore-legs pushed someway upwards, and coming last. It died two days afterwards, but the mother was soon well.

M. Dufour, too soon lost to veterinary medicine, afterwards told me that this was a method of proceeding which he had been accustomed to adopt, and with success, instead of having recourse to the knife, as most authors had advised.

Case VI.—*March*, 1832. A cow, five years old, afforded me an unusual case. On my arrival, I found presenting at the vulva, a head and six extremities. It was difficult for some time to distinguish the fore legs from the hind ones, and those of one fœtus from what belonged to the other. The head had only half protruded, and the fore legs of the fœtus that had the best position were not farther advanced than those of the second. The efforts of the mother operated equally on both of them, and the labour was making no progress.

That I might not make any mistake afterwards, I attached threads of different colours to the legs of the one and the other. With one hand I endeavoured to force back the fœtus which presented all four legs, while with the other hand I attempted to draw forward the one whose two fore legs alone were to be seen; but I was unable to accomplish my purpose. When I pushed back the foremost one, the hinder one presented itself, and *vice versâ*. I thought, however, that I could take advantage of this; and placing cords round the legs of the one that was in a natural position, and giving them to two assistants, and then seizing the one whose four legs presented, grasping the anterior legs in one

hand and the posterior ones in the other, and pushing them back with considerable force, while my assistants endeavoured to pull the other forward, and the cow fortunately helping us at the moment with a more than usually violent effort, our object was accomplished. When the chest of the one that was drawn forward reached the brim of the pelvis, I was compelled to quit my hold of the other, and withdraw my hand; but I had forced the other sufficiently back, and there was room for the first to be expelled.

The four legs of the other immediately presented themselves again. I adopted the same measures as in a former case. I fixed two cords around the hind legs, and gave them to my assistants. I seized the fore legs above the knee, and bent them, and pushed them backward, while my assistants pulled at the hind legs: the croup presented itself, and the labour was presently accomplished. The first calf was the smallest, and died on the same day: the second was reared. The mother was kept in the stable a few days, and then dismissed.

Case VII.—*April 1st*, 1825. A black mare, seven years old, was turned into a field, and, it would seem, presently afterwards fell in labour. The servant did not return to her for some hours, and then he found her in so pitiable a state, that before he advertised his master of what had happened, he ran for my father, whom I accompanied to the mare. We found her lying down covered with sweat, and making incessant vain efforts to expel the fœtus. Her struggles had been so violent, that she had laid a place bare with her head and her feet nearly two yards in diameter. The upper eyelids were excoriated, and so much swelled that the eyes were nearly closed. The colt was dead, and apparently in a perfectly natural position: it had been expelled as far as the chest.

A neighbour who had run to her assistance, had endeavoured to draw it entirely from her, but without success. We attempted the same thing, and also failed. I introduced my hand with much difficulty, and found the thighs of the colt fixed against the sides of the pelvis. The position was somewhat like that of a dog sitting, his thighs apart from each other, and the stifle joints projecting against the sides of the pelvis, rendering it impossible that the labour should advance.

As it was not possible to return the fœtus, my father separated the portion which had protruded from that which still remained in the vagina and uterus. He then made, on each side, an incision along the cartilage of the sternum. The abdomen was presently emptied. He disarticulated the last dorsal and the first lumbar vertebræ; I facilitated these manipulations by holding

the labia pudendi as wide apart as I could. The mother, who had been perfectly exhausted, permitted him to turn the hind quarters in the womb. He seized the posterior limbs, affixed cords to them, and the expulsion of them was speedily effected. Due care was then bestowed on the mother, and at the expiration of twenty days she returned to her work.

Case VIII.—A parallel case afterwards occurred to me. A farmer had turned his mare, big with foal, in a field at a little distance. Knowing that her time of foaling drew near, he often went to see her. On June 4th, 1831, he found the foal dead, with the anterior part of it expelled, and hanging from the vulva —the mother very little disquieted about the matter, and occupied in grazing. He quickly obtained assistance, and endeavoured to draw away the remaining part, but in vain, and the throes of the mother had apparently long since ceased. He sent for me. I found the foal in precisely the same position as that which my father had removed. I employed the same means, and with similar success. The mare was detained only a very few days in the stable.

Récueil de Méd. Vét. Aug. 1837.

A List of the Students who have obtained their Diplomas since the commencement of the Session 1837-8.

November 29th, 1837.

Mr. Charles Snewing, Kenilworth, Warwickshire
Mr. James Dawber, Wigan, Lancashire
Mr. Thomas Hurford, Royal Barracks, Dublin
Mr. Henry Richmond, Chorley, Lancashire.

December 6th.

Mr. John Hewish, Barnstable, Devon
Mr. Charles Symes, Ash, Somerset.

December 13th.

Mr. William Staveley
Mr. John Dawtrey, Petworth, Sussex
Mr. Charles Cartwright, Burgh, Lincoln
Mr. Joseph Armstrong, Dorchester.

December 20th.

Mr. Joseph Thompson, Howden, Yorkshire
Mr. William Scott, London.

TO CORRESPONDENTS.

At the commencement of the 11th volume of The Veterinarian, we insert, as a point of duty, as an expression of gratitude, and as a matter of triumph, the names of the avowed Contributors to our Journal. They are no fewer than one hundred and ninety-two. On support to such an extent, we frankly acknowledge that we had not calculated. Some of them are gone to their long home; but the memory of the services which they have rendered to their profession, and of their individual worth, will never pass away. There are no circumstances to which the Editor of The Veterinarian oftener reverts with chastened but dearly cherished recollection, than the unrestrained personal intercourse, or the frequent epistolary communication, which his connexion with this periodical led him to have with John Percivall, and Castley, and many others of the lights of former days.

Circumstances have produced alienation, to a greater or less degree, between him and a few of those whose names are here recorded. What shall he say of them or to them? His periodical still survives, it is the recognized veterinary journal; and never shall its pages be disgraced by that spirit and language which while they disgrace, necessarily defeat the object which it professes to seek. It shall never lend itself to the gratification of malignant feelings, nor absurdly and fruitlessly labour to establish that reputation which is attempted to be founded on the denial of the claims of every other labourer. This being premised—if there is aught by which our common cause—the progress of veterinary science—may be benefitted, let every personal feeling stand in abeyance.

To the other of our 192 friends, to whom our periodical is indebted for all its worth, we cordially thank them, and we will try to deserve their future support. Many a case stands upon record in their journals, or is deeply impressed on their minds, the knowledge of which would be instructive and useful to their brethren; and although we know the labour of body and of mind which many of them undergo, yet we also know that, a few minutes now and then being devoted to a useful purpose, much more may be accomplished than we are sometimes disposed to think.

And the more than 192 good and honest friends, who heartily wish us well, although they have not yet begun to contribute their quota to our common stock! We will not degrade our periodical by begging for assistance to it: we will only ask them to consider, how valuable a work their brethren have contributed to produce, and to recollect the account which Milton gives of some such a book: "Many a man lives a burden to the earth; but a good book is the precious life-blood of a master spirit—(ours of many a master-spirit) embalmed and treasured up on purpose to a life beyond life. 'Tis true, no age can restore a life whereof, perhaps, there is no great loss; but the revolutions of ages do not always recover the loss of a neglected experiment or truth, and for the want of which whole generations may fare the worse."

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ANIMAL PATHOLOGY.

By Mr. YOUATT.

LECTURE XVII (continued).

The Post-mortem Appearances of Rabies in the Dog concluded.—The Intestines.—Bladder.—The Glottis resumed.—The Bloodvessels.—The Brain, Medulla Oblongata, Spinal Cord.—The Post-mortem Appearances of Rabies in the Wolf, the Horse, Cattle, Sheep, Swine, Poultry, Rabbits, and Guinea Pigs.

THE Intestinal Canal.—There are no lesions in the intestinal canal sufficiently constant and definite to warrant us in placing dependence upon them. If there is much and general inflammation of the stomach, it is sure to extend, gradually diminishing in intensity, through the duodenum, and jejunum, and partly through the ileum, most intense on the mucous surface, but often involving all the coats. I have seen it occupy, and with a very great degree of intensity, the whole of the intestinal canal. On the other hand, where only a few spots of ecchymosis have appeared in the stomach, the intestines have not presented any morbid lesion. I do not recollect any instance in which there has been a discharge of blood from the mucous surface. These remarks may afford you some assistance in distinguishing between the morbid appearances of the stomach which are produced by poison, and those which accompany rabies. There is but one circumstance on which I should place much confidence, and that is, the presence, in some part of the intestinal canal, of some of those horrible substances of which mention has been made.

Some French writers have spoken of emptiness, and spasmodic contraction of *the bladder* as one of the lesions of rabies. I cannot say that I have never seen the bladder of a rabid dog

perfectly empty (and when that vessel is empty, in health or disease, we well know how small a space it occupies in the abdominal cavity, and what an appearance—but only the appearance—of spasm it assumes), but I have much oftener seen it containing, and even distended by, urine. I am perfectly assured that no conclusion can be drawn from the appearance of the bladder.

While I look for, and generally find, injection of the membrane of *the glottis*, and consider it, in union with other lesions, characteristic of rabies, I might have observed that I never saw, in the quadruped, the spasmodic closure of the glottis, which is said by some to be the immediate cause of death in the human being.

I have been speaking of *the injection of the bloodvessels* of many parts of the respiratory and digestive systems. I do not think that I should be wrong if I were to assume this as a general symptom of rabies in the dog. Not merely the heart and larger vessels, but also the smaller ones, are more than usually distended with blood. If you bleed a rabid dog, the blood pours out with great freedom. If I were addressing some of those medical gentlemen whom I had the honour to assist in certain experiments connected with rabies, I might remind them how much they were struck with this: the blood gushed out impetuously, and it was always with some difficulty that the stream could be arrested: yet I should not lay much stress on this circumstance, for it might be produced by other diseases beside rabies.

The Brain and Spinal Cord.—For many a year I have omitted to examine the state of these important organs, except there was some peculiar doubt about the case, or as a matter of mere curiosity. I used almost invariably to find injection of the membranes, and occasionally of the substance, to a greater or less extent; but I could only regard this injection or inflammation as a corroborative, and not a truly diagnostic symptom. The brain will usually display some vascularity of the membranes, and particularly of the pia mater, and this naturally depending in a great measure on the degree of previous phrenitis: indeed, I could at once tell by this whether the dog, while living, had exhibited much ferocity. I think that in almost every case there was injection of the membranes, and more of the arterial than the venous vessels. Occasionally there was increased vascularity of the cerebral substance, and this also, as might be expected, dependent on the previous exacerbations; but I never observed, or fancied that I could observe, this injection, as some have described it, more in the posterior than the anterior portions

of the brain; I have, however, seen, or persuaded myself that I saw, an evident difference—I must not say so much in the injection as in the general colour of the cerebral substance here. There was a dark tint shaded with green, as if decomposition had already commenced.

In every case that I examined, I found injection of the membranes, or the substance of the medulla oblongata. If there was injection above or below, the medulla shared in it, and usually exhibited a deeper shade; and I have just said that there was injection here, when it could with difficulty or not at all be traced elsewhere. I used at first to be tempted to consider these appearances as diagnostic; but I afterwards considered that, for aught I knew, diseases of other kinds, in which the nerves proceeding from the medulla oblongata were principally involved, might produce the same lesions. I was, however, more and more confirmed in the truth of the theory of rabies, which I shall venture in the next lecture to state to you, when I observed the uniform affection of this portion of the brain. The vascularity was more particularly evident in the corpora olivaria. Minute streaks of blood almost invariably followed the scalpel there; and the greyish yellow of the corpus had a slight hue of pink mingling with it.

In the spinal cord I always found considerable lesions, but they were not of a uniform character. I have seen vascularity of the membranes through the whole of the spinal cord, and every where of nearly the same intensity. On some occasions I have found little or no injection until I arrived at the fifth or sixth dorsal vertebra; while, in other cases, the morbid lesions have been confined to the lumbar, and, perhaps, sacral regions, and there they have exhibited the highest degree of intensity. I have seen every degree of *ramollissent*, from the commencement of the softening to almost or quite the fluidity of pus, occupying, perhaps, not more than the space of an inch, or extending from the middle of the dorsal region to the termination of the sacral portion; and also confined either to the inferior (anterior) column, or including the whole of the cord. As, however, lesions of this nature are common to every direct affection of the spinal cord, and to almost every disease in which its functions are implicated, I repeat, that I have long been unaccustomed to examine the cord in supposed cases of rabies, except there was some peculiar difficulty with regard to the other lesions, or to gratify the curiosity of some medical friend.

What, then, are the circumstances which guide me in my examinations?—The colour of the tongue, the enlargement of the papillæ on its dorsum, and the inflammation or the pharynx.

The peculiar injection of the membrane of the epiglottis, extending deeply into the hollows on each side of the frenulum; and, most of all, the contents of the stomach, and the peculiar inflammation of its lining membrane. The union of these would remove every doubt. The existence of some of the group would generally satisfy me. If I had the leaden colour of the tongue, and the peculiar inflammation of its dorsum and of the pharynx; or if I had the presence of the indigestable mass in the stomach, I should want little or nothing to decide my opinion; for I never saw it in any other disease. Also if I found inflammation of the stomach, either general or in patches—it far oftener has the patchy appearance—then I should have little hesitation in pronouncing the animal to have been rabid, if I found lines of intenser inflammation, and spots of ecchymosis on the summit of the rugæ.

When a dead dog is brought to you for examination, I am still disposed to advise you to proceed to the post-mortem examination before you listen to one word respecting the history of the case. Your opinion will be then unbiassed; and in nineteen cases out of twenty you will readily come to a just conclusion. If there should be any doubt on your mind, the history of the case, then listened to, will probably resolve it.

The Post-mortem Appearances in the Wolf.—We fortunately have one case related at considerable length of the post-mortem examination of one of these animals, and by whom, on some parts of the continent, the disease is oftener communicated than by the dog. It is related by M. Chardon, in the *Journal Pratique* of 1829.

M. Chardon first examined the tongue, in order to satisfy himself with regard to the existence of Marochetti's sublingual pustules. There was not one, nor a trace of one. The brain was softened through its whole extent, and its membranes were slightly infiltrated. The back part of the mouth was marbled; and as he proceeded farther backwards, so were also the pharynx and the trachea, with spots of a brownish violet character, of various forms and sizes, and slightly covered by a frothy mucus. There was nothing unusual in the texture of the œsophagus, except that it appeared to be a little contracted. The lungs were of a pale colour, and contracted—the mucous membrane of the bronchi was slightly injected, and the substance of the heart was easily torn. The principal lesions were in the digestive organs, some of which were the seat of much inflammation. The stomach contained nothing but a little straw; its mucous membrane was slightly inflamed, but from the pylorus to the rectum, the intestines, and particularly the small ones,

exhibited intense inflammation. The mucous membrane was at least two lines in thickness, and, through its whole extent, the intestinal tube contained a thick mucus, like yellow *bouillie,* or more like that which is often seen in the intestines of young dogs that have died of distemper. The liver was enlarged, and contained black blood and frothy bile mingled together. The kidneys were small and hard, and the bladder was empty and contracted.

This wolf was undoubtedly rabid, for a person bitten by it died hydrophobous forty-eight days after the bite.

The lesions of the mouth, pharynx, and larynx correspond with the lesions usually seen in the rabid dog. The presence of straw in the stomach, and the inflammation of that viscus, strengthen the resemblance; but such intense inflammation of the intestines is not often met with in the dog. There is sufficient likeness to identify the disease; but the case stands alone, and it is impossible to say how far more extensive experience might strengthen or lessen the seeming identity of the lesions.

In the Horse.—I will here blend together, as well as I can, the accounts given by M. Dupuy, in the *Journal Theorique* for 1835, and by our deceased friend, Mr. Moneyment, in THE VETERINARIAN for 1837: they contain almost every symptom of importance. M. Dupuy observes, that the muscles are sometimes discoloured, and softened, and easily torn; while black coagulated blood is frequently found in the intermuscular cellular texture. The membrane lining the epiglottis, and internal part of the larynx, says Mr. Moneyment, exhibited a vast deal of purple coloured inflammation, with spots of ecchymosis. The membrane of the pharynx likewise presented a similar appearance: in fact, the whole of the upper part of the mouth and fauces were more or less inflamed. M. Dupuy says, that the subcutaneous membrane was infiltrated by a yellow serosity, and that the lining membrane of the larynx, the trachea, and the bronchi were of a violet colour. These are the principal parts to be attended to. Nothing unusual, as we shall presently see, may be found in the membranes or substance of the brain; the stomach may be slightly or doubtfully inflamed; the lungs and the heart may be sound; but, in every case that I have seen, the pharynx, the fauces, and the epiglottis have told tales. The appearance in these parts, without any previous knowledge of the case, has always been highly suspicious, and, corroborated by the history of the case, they have been decisive. The tissue of the salivary glands, and also that of the parotids, is red and infiltrated. There is considerable congestion in the lungs. The pulmonary artery and its branches are usually filled with very

black coagulated blood, while the pulmonary veins, and the left auricle and ventricle, and the large arterial vessels, contain blood less red than is generally observed, and the cavities are of a dark colour. Mr. Moneyment very graphically describes this. The strongest marks of inflammation are to be seen about the heart itself, particularly the internal parts, both auricles and ventricles, and the internal coats of the larger vessels, namely the pulmonary artery and aorta, and vessels given off immediately from the principal trunks, *as if the blood itself was so contaminated with the poison, as to irritate and produce disease in the vessels in which it is circulated.* There is also usually considerable congestion of the lungs.

The stomach generally exhibits inflammation, but not very intense, about the line of division between the cuticular and mucous membranes; and there is also a small portion of brownish coloured fluid, and of hay and straw scarcely masticated, or at least not sufficiently so. The inflammation is more distinctly marked on the outer than the inner coat of this viscus. The intestines frequently exhibit very little inflammation.

To return to the head. The lining membrane of the nasal cavities is thickened and infiltrated, and covered with adhesive mucus; while the septum exhibits the curious tendency of almost every disease of the horse to resolve itself into glanders or farcy; for it contains two or three large black spots, ulcerated or preparing to become so.

The membranes of the brain are usually injected to a greater or less degree; and minute spots of blood follow the knife. The plexus choroides are enlarged, and the fluid of the ventricle occasionally reddened. The spinal chord is softened in various places, but particularly in the dorsal or lumbar portions; and there is a considerable infiltration about the roots of some of the nerves, and particularly the motor ones.

All these lesions vary materially in different cases, and in a few instances some of them would be sought for in vain. The decisive lesions in the horse are the inflammation of the stomach, usually extending to both of the membranes—the presence of the brownish fluid or of imperfectly masticated food; but more particularly the peculiar inflammation of the fauces, the pharynx, and the epiglottis.

In the Ox.—The buccal membrane is usually tumid and reddened—the sublingual glands are also reddened and enlarged—the pharynx, the larynx, and the œsophagus generally share in the inflammation; but they are occasionally altogether devoid of it. The glandular system seldom undergoes any change; but if there is morbid affection of the salivary apparatus, the parotid

gland is the principal sufferer, and becomes speedily ulcerated. The lining membrane of the three first stomachs is far from being generally affected; but the mucous membrane of the fourth stomach presents numerous little spherical prominences, caused by the presence of some serous fluid in the sub-mucous cellular tissue. This is likewise seen in some of the intestines, particularly at the cæcum. These prominences are, in most cases, about the size of lentils. The internal walls and cavities of the heart are of a deep red colour, but the substance of the heart is pale. There is usually a slight injection of the membranes of the brain, but no affection of its substance. The spinal chord is very generally affected, and through the greater part of its extent: it has a reddish hue, and is considerably softened, particularly at the lumbar region.

I feel that this account is exceedingly unsatisfactory, and I am sorry for it; but I must speak of things as I find them. The only indications on which reliance can be placed here are the inflammation of the membrane and glands of the mouth, not always seen; that of the pharynx, often very obscure; and the peculiar engorgement of the lining membrane of the fourth stomach, which is seldom absent. There is no portion of veterinary pathology so neglected as the post-mortem lesions of rabies in neat cattle.

In Sheep.—I am enabled to give a somewhat more satisfactory account of these lesions in the rabid sheep, from one dissection which I was enabled to make, and from the notices of Messrs. Yvart and Vatel, at Alfort, and my friend Mr. Baker, at Sudbury.

The tongue almost uniformly presents a peculiar appearance. The epidermis is dry and somewhat irritated; and, surrounding the edges of the tongue, and almost in the form of a riband, are a succession of fungous ulcers, varying from the size of a pin's head to an irregular surface of nearly half an inch in diameter: some of these ulcers penetrate considerably beneath the cutis. These may, however, be in a great measure mechanical, and caused by the unnatural and hard substances which the rabid sheep will so frequently and obstinately seize and endeavour to masticate. The back part of the mouth generally participates in the inflammation, and usually the inflammatory blush extends to the pharynx and larynx, and superior part of the trachea. In many cases, however, perhaps the majority of them, there is very slight change of colour on any of these membranes. It is not always that the lungs present any morbid lesions; but in the sheep examined by Mr. Baker they were a "little flushed," and they had a few almost black spots, about the size of a hazel nut, on

the pleural covering, resembling those which are sometimes seen in the dog: in this case, the fauces were also inflamed. The heart and larger bloodvessels are usually in a normal state; but occasionally little spots of ecchymosis have been seen on the surface of the heart, indicating, not the nature of the disease, but the degree of inflammation of the pericardic covering.

The œsophagus is mostly free from inflammation. The paunch and reticulum are frequently filled with half-masticated food, mingled with sticks and stones, and various kinds of indigestible substances, from which proceeds a most noisome and putrid stench. There is frequently a great quantity of wool and hair in the paunch. Generally there are patches of inflammation on the cuticular membrane of these stomachs; but in a great many instances there is not the slightest blush of it. The third and fourth stomachs rarely present any morbid appearance, and are generally empty, or nearly so. In a few cases, inflammation of the mucous membrane of the rectum has been found: this has been probably accidental. In the greater number of cases nothing is observed indicative of rabies in any part of the intestinal canal.

There is generally some injection of the pia-mater and arachnoid membrane. The substance of the brain is also injected, and they are principally the arterial vessels that are affected. This is particularly evident in the grey substance of the brain, and in which there is also a slight tendency to *ramollissement;* but the medullary substance is rarely affected. In the spinal cord the lesions are certainly more decisive. Almost at the commencement of it the grey substance assumes a peculiar colour: it is somewhat approaching to lilac. The tint is faint in the cervical portion of the cord, but before we arrive at the lumbar portion it is distinct enough; and there are striæ, of inflamed substance, and the evident injection of numerous minute vessels. This portion of the cord is also perceptibly softened. All this was sufficiently plain in the sheep which I examined; and Professors Vatel and Yvart have constantly found it; but, after all, it only proves that, in the sheep, rabies is accompanied by considerable inflammation of the spinal cord, and particularly of the grey portions of it.

In Swine.—I am ashamed to say that we are indebted to a human surgeon for the greater part of what we know of the post-mortem appearances of rabies in the pig. I only wish that he had been candid enough to acknowledge his obligations to the first veterinary surgeon who devoted himself to the consideration of this disease, and by whom it was most admirably illustrated—I mean Mr. Blaine. I have never had the opportunity of examining a rabid pig, and I much regret it.

In Mr. Gilman's work, nothing is said of the membrane of the mouth generally, or of the pharynx; but every examiner agrees that there is inflammation of the dorsum of the epiglottis, or of the glottis, or both. The inner membrane of the posterior surface is occasionally inflamed. The stomach is generally filled with all the nauseous substances that a rabid pig will so greedily devour—they sometimes extend to and occupy the duodenum. Every examiner likewise agrees as to the state of the stomach, the villous coat of the anterior surface of it being more or less inflamed. This was found in all Mr. Gilman's cases. He thus describes two of them. Of the first, he says "the villous coat of the anterior surface of the stomach, towards the cardia, was very slightly inflamed, and the surfaces of two of the rugæ on the opposite side of the stomach presented a livid appearance, approaching to a chocolate colour." He thus speaks of the second: "The villous coat of the stomach was inflamed about the pylorus, and had several chocolate-coloured striated marks, approaching to mortification." Contrary to what I hinted at just now, of the supposed state of the bladder, this viscus was much distended with urine, and contained more than a pint.

In a Hen, a Rabbit, and a Guinea Fowl.—A hen, as I have already stated, was, under the superintendence of Dr. Ashburner, inoculated with the saliva of a rabid ox, nearly eleven weeks before. I have related the symptoms which preceded her death. The inoculated parts appeared recently inflamed, and there was great vascularity about the cicatrices, each having become of the size and shape of a compressed pea, the vessels of which were turgid with blood. There was no appearance of this when the bird was inoculated, nor at some subsequent intermediate periods at which it was examined. The trachea and œsophagus were considerably inflamed, and the vessels of the brain were distended with blood.

Some rabbits were inoculated with the virus taken from a dog belonging to Sir John Shelley, that was supposed to be rabid, and the true nature of whose disease it was of great consequence to decide. According to the evidence of Mr. Earle, delivered before a committee of the House of Commons, they exhibited all the phenomena of rabid animals. They were confined in a place where they could procure no rubbish or dirt, and had nothing but clean wholesome food given to them; yet after death, their stomachs were found to be filled with their own fæces.

In the guinea-pig, referred to in a former lecture, and in which rabies was produced by inoculation, there was injection of the epiglottis, and spots of ecchymosis on the stomach. But it is time to conclude.

A CASE OF METASTASIS OF THE ABSCESS OF STRANGLES.

By Mr. John Tombs, *Pershore.*

July 1*st*, 1837.—A brown cart horse, six years old, the property of a farmer in the neighbourhood, was taken ill with laryngitis. He was bled, had aperients, and the throat was stimulated.

On the 4th July, I visited my patient at three p.m. He was inclined to eat, seemed cheerful; pulse 40. At six p.m. I was summoned to attend in great haste, as the horse had become suddenly and alarmingly worse. I saw him at seven o'clock, and found him down, with his mouth open, and gasping for breath. He breathed so hardly—like roaring—that he was distinctly heard at a distance of fifty yards. There was a copious discharge of saliva from his mouth. He was evidently suffering the most excruciating pain, and was nearly suffocated. My only chance of saving him, was to perform the operation of tracheotomy, which I did with some difficulty, having no other instrument in my pocket than an abscess lancet. What added more to the difficulty, was the immense mass of muscle I had to cut through before reaching the trachea.

The moment I opened the trachea the animal was relieved. I allowed ingress and egress to the air by stitching the divided muscles to the skin of the neck.

July 5*th*.—He cannot swallow, but he breathes freely through the orifice. I inserted a seton over each parotid gland, and blistered the throat extensively, and gave medicine in the form of a linctus, with gruel to drink.

8*th*.—An abscess is forming between the angles of the jaw. Blister the part, and exhibit fever medicines.

10*th*.—I opened the abscess. Tonics composed of gentian and ginger were then ordered. Between this time and the 20th, numerous small abscesses were formed from the parotid glands down to the nose. When the suppurative process ceased, mineral tonics were administered, which materially improved the health of the horse.

August 2*d*.—He was turned out to grass, and worked occasionally.

31*st*.—His owner requested me to see him again. I found him lively, but with an indifferent appetite, and rather tucked up at the flank. Pulse 45, respiration tranquil; no appearance of a pulmonary disease. He has never eaten heartily since the original attack. I suspected that the poisonous matter of strangles was con-

centrating in the mysentery, and informed the owner that I had strong reasons to believe an abscess was forming internally. I gave him eight grains of iodine daily.

Sept. 4th.—I saw him again: he was lively, but ate sparingly.

6th.—I was sent for in haste to see him. I found him rolling about, looking back at his flanks, and evidently labouring under great abdominal pain. The countenance was peculiarly dejected; the pulse 90, and extremely weak; and the bowels constipated. My opinion that an abscess had formed somewhere in the abdomen was strengthened by these symptoms. I despaired of my patient, but gave him a solution of aloes, with a view to relieve the bowels. The intestinal pains increased until eleven P.M., when he expired in great agony.

7th.—Post-mortem Appearances.—As the harness maker had opened the body and removed the intestines from the abdomen previous to my arrival, I cannot be precise as to the actual seat of a tremendous abscess that had been formed contiguous to the ileum. When the intestines were straightened, it was situated against the ileum, about six yards from the stomach: the cyst contained a full quart of thick purulent matter. Its coat was cartilaginous, and an inch thick. The abscess was easily dissected from the intestine. The cæcum was mortified—the omentum was black and rotten—the mysentery was thickened and yellow; the yellow appearance I attributed to the effect of the iodine.

On prosecuting my dissection, I discovered another abscess, containing a pint of pus, situated at the superior and posterior part of the stomach, between the muscular and cuticular coat. The cuticular membrane was considerably thickened.

I recorded a case of strangles that terminated fatally, where an abscess formed near the kidnies, in vol. ii of THE VETERINARIAN: since that time I have seen a case of an abscess forming on the brain, and connected with strangles.

In order to fill up this paper, I will forward you two singular cases of affections of the eyes. A gentleman, six miles from this town, has a horse, eight years old, that has had several attacks of ophthalmia within the last three years. He has now an opacity on the inferior part of the transparent cornea of each eye, precisely alike. The crystalline lens of the off eye is perfectly clear; but there are two very minute cataracts in the lens of the near eye, not much larger than the point of a pin. The opacities on the transparent cornea are sometimes larger and sometimes smaller, usually about the size of a pin's head.

A farmer in this neighbourhood has a colt, three years old, that was foaled with only one eye, which eye has had a continual dis-

charge of pus from the birth. On the transparent cornea, near the inner canthus, there is a perfect skin with black hair on it (the colour of the body of the animal), and adhering to the sclerotica: it is about the size of a silver fourpenny piece; it does not obscure vision, as the pupil is clear*.

P.S.—If memory serves me correctly, I think your valuable correspondent "Nimrod," in some back number of THE VETERINARIAN, has promised to record a case of a horse that died from fat. I have been waiting to see it, as I have, most probably, a similar one to communicate. The subject of my case was the fattest horse I ever saw.

A NEW METHOD OF REDUCING HERNIA.

By Mr. HORSBURGH, *Castleton, N.B.*

IN presenting the readers of THE VETERINARIAN with the following case, I will not flatter myself that I am giving the profession any thing new. Cases of the same kind may have been treated in a manner nearly similar, and with similar effect. However, as this is the first case that I have had an opportunity of thus treating, I send it in the hope that some members of the profession, under whose notice this may come, may have cases on which they may try the same experiment; and I shall be most happy, through the pages of THE VETERINARIAN, to hear the result.

In July 1835, a grey horse, the property of Mr. Laing, farmer, of Pardivine, in breaking out of a park, staked himself on the fence, and was with some difficulty got off. He was much hurt —fever took place on the third day; on the fourth day I was called to attend him.

The whole abdomen was much swelled, and also the integumental and cellular investment of the chest, to the point of the sternum. I took the usual mode of reducing the fever, by bleeding,

* There was a lamb in the gardens of the Zoological Society of London, about a twelvemonth ago, that had a little tuft of hair growing on the centre of the transparent cornea. It about half covered the pupil, impairing, but not destroying the sight of that eye. It was a source of great annoyance to the animal, and there was a constant discharge of mingled watery and sebacious matter from the eye. Had it not been for the singularity of the case, I would have endeavoured to have dissected from the cornea the skin on which the hair was embedded. This poor animal gradually wasted away, and died tabid. I do not, however, believe that this was to be attributed to the irritation produced by the tuft of hair.—Y.

physic, &c.; and in a few days punctured the swelling in different places, whence a quantity of fluid escaped, and the swelling gradually diminished in size. In about ten days it had entirely disappeared along the chest and abdomen; but a considerable enlargement still remained in the left iliac region. This I often examined, and from the extent and hardness around, could scarcely make myself certain whether it was hernia or a collection of matter. *No man is obliged to be always right.* I came to the latter conclusion, and determined to open the tumour and let out the matter. I made an incision cautiously through the integument, when a quantity of bloody-coloured fluid escaped. I thought I was right, and taking a bistoury, I enlarged the opening *a little;* when at each act of respiration, part of the intestines protruded. I immediately closed up the opening with a pin and tow, and had the horse put into the stable. Fearing that sad inflammation might take place from the intestines being, probably, wounded, I visited him on the next day: but no bad result had followed. The wound healed, the swelling gradually left the part, and nothing but the soft hernial sac remained, measuring about ten inches in length, seven in breadth, and protruding nearly or quite four and a half inches. The horse was perfectly healthy.

I proposed to operate on the animal, assuring the owner that, if I did not cure the horse, I could do no harm. He for some time hesitated; but one day, strangulation seeming to have taken place, and the animal being in extreme pain, he was taken out of the stable to an open court in order to die. When I arrived, however, he was considerably better; I then got full liberty to do any thing for him I pleased, and immediately put him under the following preparation:—

I had him secured in a stall, where he could get at nothing to eat. I gave him a dose of physic, and only as much boiled barley twice a-day as I thought would merely *keep life in him,* with a single handful of hay at mid-day. In about a week I gave him another dose of physic, and kept him on the same regimen for seven days more. By this time the abdomen was greatly reduced in size, and the hernial sac was also considerably reduced. I then fired the tumour through its whole extent, in lines about half an inch apart, and pretty deep, and applied a strong blister; continuing the same short commons until the wound was healed.

It was then little larger than a person's hand. Not content with this, I repeated the operation, both the firing, blistering, &c. The result fully answered my expectations.

He has since been at all sorts of work, has stood the test of two years, and only on minute inspection can the lines of the firing-

iron be seen. No person would suspect there had ever been hernia in the part.

In making the above experiment, I thought if I could exite such an inflammation as would extend to the inner parts, adhesion of the intestine would take place, and prevent the protrusion of it through the peritoneal opening. How far my theory is correct, remains to seen; and, if ever I have an opportunity of making a post-mortem examination, I will immediately give you the result.

THE PAST AND PRESENT STATE OF VETERINARY SCIENCE.

By Mr. T. W. Mayer, *Newcastle-under-Line.*

No. VII.

[Continued from Vol. X, page 606.]

A suspension from those immediate objects which more or less press upon the attention of every man at the close of one year and the commencement of another, disposes him, in his moments of repose, to consider what are the immediate subjects likely to occupy his future consideration. With sentiments such as these do I, after a somewhat rapid and hasty sketch of the past and present state of veterinary science, return to make some further observations on what has been already stated, and to offer some hints with reference to the future.

First, I would remark that, as veterinary science has progressed in proportion as a more accurate knowledge of it has been obtained and circulated, it is absolutely necessary that an efficient system of public education should be carried out, in order that a more extended acquaintance with the veterinary art may be acquired, and the profession at large essentially benefitted.

I trust that the truth of this remark will appear evident from what has been already stated in the foregoing papers; for whenever new facts, or new methods of explaining old ideas, are adopted, some good must accrue to the particular science that is under consideration. So it was in former times, when the experimental investigations of some, and the reasonings of others, were brought to bear upon veterinary science. These things led to further inquiry and observation; and to give them force and effect, to fix a standard of truth, and to dispel the delusions of error, was the leading plan, the grand object in adopting a system of public education. Again, this, by making known what

has been satisfactorily ascertained, or what approaches to almost absolute certainty—by pointing out what remains to be known—by offering opportunities for research and investigation, imparts a stimulus to the students, and promotes, in a very material degree, the peculiar knowledge of the science or sciences which it professes to teach.

But education, like the mind, cannot be lying upon its oars; it either must be progressing, or it must retrograde; it must be either collecting fresh facts and stores, or it becomes a non-entity, and resolves itself into the mists of darkness and error.

Exactly in accordance with these views do we find education in the past and present state of our science. It has not increased the stores of knowledge with that rapidity which is desirable, though it has undeniably increased them. It has not offered any strong inducement for more extended observations and facts whereon to work. Why? Because the system of our education has not been sufficiently carried out to diffuse that extent of *real veterinary knowledge* which is absolutely necessary for the interests and welfare of the science. Not that I mean to imply that the present system is so bad that it wants a total change—a subversion of the foundations whereon it rests. No; from my very heart I abhor the spirit of that man whose secret objects are of this kind; and who, under the mask of improvement, would pull down the present system, merely to raise a superstructure adopted and carried out from a spirit of reckless change or malevolence. The system of public veterinary education, as originally laid out, and the foundations of which remain, are, in my opinion, liberal, and sufficient for all the purposes of effectually promoting and cultivating veterinary science, and enlarging the dignity of the profession. All that is wanted is, that these plans shall be carried into execution, and that there shall be raised upon the foundations so well laid in 1791, a superstructure proportionate to the wants of its members: following, in this instance, the example of a genus of shell-fish called the Ammonite, that forms and lives in a chambered shell, which it has the power, as it increases in size and feels the inconvenience of want of room, of enlarging by the formation of new chambers, in which it may take up its abode, and which add materially to its capabilities and its value.

But we proceed, secondly, to remark, that veterinary knowledge has been increased and established by the testimony of many; so are the discrepancies which at present prevail in it likely to be reconciled—the future education of its members improved—and the progress of the science generally accelerated, by an association of its members.

Need I refer your readers to the instances in which such an

association, from the times of darkness to light, has been productive of substantial good? It was from an associaton of men of like mind that the establishment of a veterinary college was determined upon and is maintained. It was from an association of students that many an important fact in pathology was drawn out—many a presumptuous man humbled, and many a timid aspirant in veterinary science taught confidence in himself. It was from an association of talented individuals, that a veterinary periodical was established; and it is by them, in some degree, maintained. It was from a similar association that a veterinary club was formed. It was from such an association that, in the year 1836, a society was formed, composed of men of different standing in the profession, but having one paramount object in view, and which ought to be especially dear to the heart of every sincere member of his profession; viz. the advancement of veterinary science. The good effects of this society are already visible. I refer to its proceedings during the last year, and the inducement which is now held out by it to every practitioner to contribute his share to the enlargement of veterinary knowledge, as a testimony to the truth of the foregoing remark. That it may long live to promote its grand object, and to honour the profession by its consistent and praiseworthy proceedings, is the sincere wish of my heart. Let every sincere friend to it say, "So be it."

Before proceeding to the third remark, I would fain observe the pleasing prospect there is before the profession, that the substance of these remarks will at no distant period be carried into execution; and an extended importance given to those improvements already in operation. Every day's events press this feeling upon us. The hostility, the rancour, and the violence which disturbed the profession at one time, has died away, and men have had a calm leisure to think over those things which will never be accomplished by clamour. Prejudices begin to give way; truth and justice begin to assert their sway; and error, with its garb of sophistry, perishes beneath her influence.

I proceed to remark, thirdly, that, as veterinary science has been promoted and upheld by the respectability of many of her members, it is incumbent upon all to shew to the world by their character, example, and influence, that we aim at that station in society which her sister science enjoys.

What has been her station in society until within the last few years? At one time in the hands of blacksmiths, now of professional men. And, although there is nothing in itself disreputable, but rather otherwise, in alleviating the pains and sufferings of poor dumb animals, intended by a beneficent Creator for our use; although it requires more tact and discrimination

to judge what is the peculiar disease under which the brute labours than is generally required in human medicine, from the circumstance that our patients cannot express in words what they feel; and although it requires as liberal an education and as extended an induction into the principles and practice of medicine and surgery, yet have we not been looked upon as little more than the companions of stable-men, and scarcely a grade above them in society? Why? Was it because that which we practised was not a science? Oh, no! It was, because the members of our profession either knew its details imperfectly, or had lost their character and respectability. On casting our eyes over the veterinary world at this moment, although I might point out many bright examples of men who raise the character of the profession by the honourable conduct and great talent which they exhibit, how many more could I not point out by whom the character of the profession is sullied and lowered by the loss of all respectability founded on honourable conduct; and, either with or without professional skill, distinguished in the world only as the frequenters of taverns and the associates of blackguards? Can we expect our profession to rise when such is the conduct of too great a proportion of its members? No: and we may probably find in places where such instances as these have been found, a farrier or cow-leech, distinguished in his walk through life by the title of a respectable man, preferred before the veterinary surgeon. Oh, that men were wise, and that they would for their own sakes, and for the sake of the profession, consider these things.

[To be continued.]

THE ACQUISITION OR THE LOSS OF PURE BLOOD IN THE BREEDING OF THE HORSE.

[We extract the substance of this essay on account of the singularity of its mode of reasoning, and the importance of the truths which it develops. It is extracted from *Le Journal des Haras*, a French sporting periodical, edited by Le Comte de Montendre, and which is rapidly increasing in respectability and value.]

Many persons who are practically occupied in the breeding of the horse, little familiar with the language of scientific men, and having a mere superficial knowledge of the different breeds, and the laws which govern their origin and their preservation, know not how to determine the increase or loss of pure blood which

will result from the employment of two individuals of different breeds. They understand that, by the coupling of a horse of pure blood with an ordinary or indigenous mare, the progeny will be *half-bred*; they believe that, by the union of this half-bred mare with the same father they will have a progeny three-quarters bred; but they cannot comprehend how it is that they have not pure blood in the third generation. There is a great deal of roguery about these different gradations of blood: interested or dishonest dealers talk loudly of $\frac{7}{8}$ and $\frac{15}{16}$ of blood, but few seem to comprehend the real proportion of pure blood which exists in a horse that has any deviation from absolute purity.

It may be therefore received as a principle, that, from the union of two individuals of different breeds, a half-bred progeny is produced; i. e. containing half of the father and half of the mother. Then it is easy to draw up a kind of scale by which we may easily determine the degree of pure blood that any generation, however distant, may possess; or the proportional quantity of pure and common blood which flows in the veins of any horse whose progeny is known.

A recourse to figures is here necessary, in order clearly to express the proportional transmission of pure blood to races of inferior value. Let us call the horse of pure blood *Régénératrix*, or express him by the letter R, and he shall be equal in value to 1. The mare shall be called *Dégenérée*, expressed by the letter D, and her value 0. Then the progeny which may result from the union may be characterized by the letter A, *Amélioré*, and it is composed of half of the father and half of the mother, and thus decimally expressed $\frac{1+0}{2} = 0.50$, or $\frac{1}{2}$.

Then we suppose that this progeny, being a mare, is covered by another thorough-bred horse, and the calculation will stand thus, $\frac{1+0.50}{}$ or $\frac{1.50}{2} = .75$, or three parts pure blood.

We carry it on to another generation. The progeny shall again be a mare, and be covered by another thorough-bred horse, and the result is $\frac{1+0.75}{2}$ or $\frac{1.75}{2} = .875 = \frac{7}{8}$ pure blood.

The fourth generation will thus stand, $\frac{1+0.875}{2}$ or $\frac{1.875}{2} = .9375$, or $\frac{15}{16}$.

The tenth generation would give, as the reader may work out if he pleases, $\frac{1023}{1024}$ pure blood; and the twentieth would possess $\frac{1048525}{1048576}$ of pure blood; thus we should constantly approach nearer and nearer to the unit expressing the value of the father, but we should never quite arrive at it. The deficiency would be so slight as not, to any extent worth consideration, depreciating the value of the offspring, but the pure blood would never be absolutely reproduced.

This is a very important view of the science of breeding; for, if the principle here stated is true—if it is rigorously just—it must be admitted that every breed, brought to a certain state of excellence by this uninterrupted succession of improvement, may sustain itself in this state of excellence without having recourse to the pure breed from which it derived its first principle of improvement. All that is necessary is, to employ, for the purpose of reproduction, animals of both sexes uniting in the highest degree the essential moral and physical qualities of the improved race. There are, however, great difficulties attending the conservation of this race; and without incessant care deterioration from the point attained will soon be evident.

In despite of the worth of the breed which may have been established—although it may approach as nearly as possible to the pure race, both as to form and endurance—still it carries in its blood a maternal indestructible germ of debasement; always ready to develope itself, by little and little, under certain local influences—always under the power of divers agents impairing or modifying the general economy, until, at length, a certain alteration of form, an impairment of the moral qualities, an effacement of the paternal type, takes place, and a reproduction of the stock of the mother, with all its characters of inferiority. He therefore will act wisely who, from time to time, regenerates his own improved stock, by crossing it with pure blood that has no heterogeneous ignoble stain.

If we couple together a half-bred horse with a mare of the same standard, the character of the progeny would, according to the calculation just now made, readily appear $\frac{0.50 + 0.50}{2} = \frac{100}{2} = 0.50$. The progeny would be of precisely the same grade as the parents. Experience, however, tells us that this is not the case; the produce of the two half-breds undergoes a certain degradation, and its value would be over-rated at 0.50, or $\frac{1}{2}$. This may appear to be an anomaly; it is only apparently so, and implies no contradiction to the principle laid down: on the contrary, this degeneration strengthens the rule, and clearly shews that the pure blood is the essential ameliorator. It proves that part of its influence is annulled—that part of its regenerative power is lost by the sole fact of its mingling with blood less pure, less rich, and by means of which its agency is modified, its power diminished. It has to combat both the local influences, which are more or less opposed to the success of the cross, and the tendency to the reproduction of the maternal type arising from its being indigenous to the country.

If we apply the same reasoning to superior crosses—to generations the most distant from the original inferior native stock—

we shall not hesitate in acknowledging that the value of the created breed cannot be maintained by selection from that breed alone. The degeneracy may be slow, insensible, long unperceived, on account of the power which the pure blood has to repel contamination; but that blood can only retard the tendency to retrograde; it can never altogether arrest the progress: that must be effected by occasional, and, perhaps, not unfrequent mixture of the pure blood.

Another thing should not be forgotten, that the march of degradation having commenced, and no recourse being had to that by which alone its progress can be arrested, it will proceed with fearful and yearly increasing velocity. The table by which is seen the improvement of the race under the constant influence of pure blood, will also express the rapidity of the degradation.

Supposing, finally, that a mare, that has approached to that degree of purity of blood which our table has given to the 30th generation is crossed by a horse of no breeding, and this system is carried on, the table will precisely express the rapidity of the degeneracy. At the 4th generation there will only be $\frac{1}{16}$ part of pure blood remaining; at the 10th not a thousandth part; and at the 20th not a millionth part. These are important truths, and deserve to be well considered.

A CASE OF EARLY IMPREGNATION OF A HEIFER CALF.

[The following brief account is extracted from a letter lately received from a valued medical friend, and amateur but scientific agriculturist in Gloucester. At no very distant time we hope to be permitted to append his name to some interesting and valuable communications.—Y.]

By the way, I saw a curious thing a few weeks ago. A gentleman in my neighbourhood, who takes a great pleasure in breeding and feeding good stock of every kind, was rearing a heifer calf, a direct cross between the short horn and Hereford; and which was nearly seven months old. She was obliged to be slaughtered, in consequence of thoracic inflammation, and in her uterus was found a full-formed male calf; I should say of three months. She had run with her dam in the field with the dairy-cows, and with a three-years-old bull, who was her sire, and by whom she must have been impregnated. She had never been observed to exhibit the usual œstrum. Is not this an unusual occurrence?

ON THE RE-UNION OF FRACTURED BUT NOT DISPLACED BONES.

By Mr. J. B. Simonds, *Twickenham.*

In the last number of your excellent periodical is a valuable paper from Mr. Friend, of Walsall, on fractures of the bones of the extremities. I had thought of making a few remarks on these cases, but, probably, should not have carried my intention into execution had not a similar case occurred in my own practice to-day. With the greater part of the opinions offered by that gentleman I cordially agree; but there is one to which I cannot assent, as my own practice compels me to come to a different conclusion.

He says, that every case of fracture without displacement of the parts would have been curable, if committed to the care of a veterinary surgeon in time. Now, of these deceptive cases of fractures, if I may be allowed such an expression, three or four of the tibia have fallen under my observation, and not in one of them, (although I flatter myself the same treatment as that recommended by Mr. Friend was as rigidly adopted) was I successful. I have invariably found, that the power afforded either by the periosteum, muscles, or fasciæ, separately or conjointly, has, after a few days, been withdrawn, and the bones have separated; giving that appearance to the leg which is so graphically described by Mr. Friend. I will relate a case in proof of this assertion, which occurred in my practice in Suffolk.

A young and valuable cart-mare, the property of a Mr. Knight, of St. Lawrence, near Bungay, had received a kick from one of the other horses during the night, they being at that season of the year turned into the yards. On the following morning, this mare was discovered to be lame in the near hind leg, but the cause was not apparent to the owner. He requested me to visit and examine her. I found the mare in the stable bearing some weight on this leg, but certainly not so much as on the other leg. She was feeding, and did not seem to be suffering much pain. The pulse was a little increased.

I made an examination of the leg without being satisfied as to the seat of lameness. I then inquired whether she had been newly shod, and proceeded to take off the shoe, in order to examine the foot. In doing this the pain was evidently increased, and she could scarcely bear the foot being raised, which satisfied me I must look much higher for the cause of lameness. She was led into the yard in order to make a more minute examina-

tion of the whole limb; when I found a slight contusion upon the inner side and about the middle of the tibia; painful to the touch, although not larger than a half-crown piece: the hair was not rubbed off on this spot, and I could not detect any other injury or blow.

Having seen a case or two of this kind previously, I at once concluded there was a fractured tibia, and communicated my fears to the owner, who could hardly suppose (to use his own expression) that the mare's thigh was broken, and yet nothing out of place. I had her led back into the stable, took away some blood, gave a cathartic ball, used some cooling lotion to the part, and which I also directed to be kept well wet with cold water, and for her to remain tied up as I had fixed her, and kept as quiet as possible; the diet to consist of mashes.

These injunctions were strictly adhered to, and during the two following days all seemed going on well, as also on the third day, when I repeated my visit.

Upon the morning of the fourth day, I received a message, stating, that the mare's thigh was completely in pieces; and which upon my attendance I found to be the case. She was immediately destroyed.

The bone, on examination, presented an oblique fracture. Here, then, was a failure of the treatment; and in all cases of the like kind I have found the same result.

I will now relate the case to which I was called this morning. A useful bay horse, the property of Mr. Chamberlain, of this place, was discovered to be lame in the off hind leg. There was, likewise, a small wound upon the stifle of the near hind leg. He was supposed by the owner to have got his leg over the bail which separated him from the next horse during the night, and perhaps, to have fallen, but he was found standing in the morning. The respiration was hurried, and there was an increased pulse. He was supporting a little weight on his off leg, but was evidently suffering great pain.

On examination, I found a contused surface, not larger than that described in the preceding case, immediately upon the inside of the tibia, and about mid-way between the back and the stifle. It was extremely tender upon pressure; but no other appearance of fracture could be detected, although I was certain of its existence. I bled him, gave a cathartic, had cold water applied to the whole limb, and sent for my slings to place under the body, so that he might not struggle and so misplace the divided ends of the bones. The pain seemed to be increasing, and he kept shifting his position, by hopping on the other leg; in doing this, and before I could fix the slings, he slipped, and fell against

the stall, and then quite down upon the off side. I at once saw that it was all over with my patient. He, however, rose again, which I hardly expected; and it was now too evident that I was right in my first opinion of the case. The tibia was completely in two: I had him destroyed.

I regret I did not see the bone, for the knacker, although told to leave me the thigh, sawed the tibia asunder just above the hock and below the fracture, and left me the lower half of the leg.

I will not take up more of your valuable journal by further remarks on these cases, for they would be only adding to the number of facts on record, that fractured bones may and do exist some time without the injury being detected. At last, in many cases, and in all my practice, they entirely separate, and it becomes necessary to destroy the animal. I do confess, that I cannot join Mr. Friend in his belief, that the divided bones will generally or scarcely ever become re-united.

A CASE OF RUPTURED AND DECOMPOSED STOMACH IN A COLT.

By Mr. W. S. Wallis, *Halstead.*

Oct. 13*th* 1837.—A valuable Suffolk-bred cart colt, rising two years old, the property of E. G. Barnard, Esq. M.P. was observed by the yard-man this morning, to move sluggishly about the pasture; there was a dulness about the eye, and he did not feed so well as usual. During the day he appeared to improve a little, and as there did not seem to be much the matter with him, he was allowed to go at large for the night.

14*th*.—There was very little change. At the crib he discovered his wonted jealousy lest his partners should obtain more than their share, though in this respect he was something like the dog in the manger, for he fed sparingly. The symptoms of disease were, however, so slight and equivocal, at least in the judgment of the looker, who is a better sort of man than those commonly found in that capacity, that it was not thought necessary to call in any medical assistance.

15*th*.—No alteration, except that he looks thinner, and rather tucked up at the flank. I was requested to see him in the course of the day. About 3 o'clock p.m. I attended. He was in the field with two other colts. On my approach he ran towards his companions, and playfully caught one of them by the neck, and then snapped at the other, following them towards the yard which joined the field. I soon overtook the invalid,

who all at once seemed to lose his cheerfulness, stopped, and suffered me to go up to him. His coat was staring; the skin a little tight upon the rib; considerable dulness of countenance, and much listlessness of manner. The pulse was about 40, and of rather an irritable character, if I may so express myself.

These symptoms, I must confess, together with others discovered on my further examination of him, did not at all prepare me for the sudden and fatal termination of the disease. He with much effort voided a small quantity of hard black dung, coated with mucus, and streaked with blood; and as I walked beside him he grunted once or twice, which I considered to be from pain in the bowels. My first object was to relieve them: accordingly we removed him into a warm shed, and administered laxative medicine, clysters, &c.

The man left him at 9 o'clock P.M., not considering him at all worse; he drank some water and ate a small quantity of bran mash.

In the morning he was found dead and stiff, having apparently fallen and died without a struggle.

I was requested to see him opened. There was very great extrication of gas, which, on dividing the abdominal muscles, escaped, carrying with it portions of ill-digested food to an almost incredible distance. From this circumstance I suspected that some portion of the intestine had been opened; but on further exposure of the abdominal cavity, immense quantities of this indigested matter were presented to view, distributed almost all over the bowels, and closely impacted between their folds, and in which situation it had doubtless been some days. It was very hard and dark-coloured, evincing the degree of pressure that had been applied. There remained of the stomach a narrow slip only, which served as a medium of connexion between the œsophagus and the duodenum, and this was nearly decomposed. The right kidney was very much congested, and black. All the other viscera, both abdominal and thoracic, were healthy, except the single colon, which contained a large portion of hard dung. This bowel had undergone much inflammatory action, as well as those parts of the peritoneum, which were in contact with the food. The brain was not examined.

I am quite at a loss to account for the very imperfect indication of disease during life, considering that the decomposition and absolute destruction of so important an organ as the stomach was rapidly going on.

Cause.—The only probable cause of such a disease that I can possibly imagine is, that for one or two nights prior to the first symptoms of illness, or at least of their being noticed, there

had been an unusual quantity of watery vapour present in the atmosphere during the night, and followed by hoar-frost in the morning. The colt quickly filling his stomach with the grass laden with congealed moisture, the powers of the stomach would be weakened or suspended—the process of fermentation would speedily be established, to which would succeed evolution of gas to such an extent as to produce the rupture. But this, of course, is mere conjecture on my part, and I know that it is very unusual for this to occur on upland pastures.

A CASE OF POISONING BY NITRE.

By Mr. Surginson, *Appleby.*

On the 26th of the last month my attention was requested to a brown mare, the property of Capt. Hammond, of Appleby, which had been ill with a cold nearly a fortnight. On my arrival she exhibited the following symptoms:—Pulse quick, small, and wiry, and sometimes I could scarcely detect it at all; the membrane of the nose intensely red, and interspersed with livid spots; the conjunctival membrane highly injected; the tongue protruding four or five inches out of the mouth, and so much swollen that the animal was unable to move it in the least; the saliva flowing profusely; the mouth burning hot; the muzzle deathy cold; the extremities nearly of their natural temperature; respiration quickened; the breath almost insufferably offensive; sore and frequent cough; increased discharge from the nasal cavities; the bowels much confined.

I examined the mouth, and I found beneath the tongue and along the sides of it much redness and inflammation, but no bladders or ulceration. The animal seemed fidgetty and uneasy; at length she laid herself down, and remained stretched out a considerable time, comparatively quiet—only raising her head now and then and casting a glance at her side. All on a sudden she raised her head higher than before, and anxiously gazed at her flanks for a short time, and then sprung suddenly up. For a while she seemed a little uneasy, but did not attempt to lie down again for nearly an hour. She then lay down once more, and stretched herself out, but did not roll or struggle in the least. I considered that she was labouring under violent catarrh. The swelling of the tongue and the inflammation of the salivary glands I regarded as concomitants, or rather as consequences of it; and the slight cholicky pains that were shown, as arising from some impairment of the digestive system.

On this principle I treated the case. I bled her until the circulatory system was affected, although I confess I did it with some fear, considering the previous state of the pulse. After this, the following ingredients were made into a ball and administered :—Nitre three drachms, Barbadoes aloes and emetic tartar, of each a drachm, and half a drachm of powdered digitalis.

27*th*, A.M.—Symptoms much the same. Medicine as before. Laxative enemata were very frequently thrown up, and I ordered that meal gruel should be constantly within her reach, of which she repeatedly sipped a little.

P.M.—Very little alteration, only she has lain a considerable time to-day, and in a natural position, and the breath has lost its offensive smell. Medicine the same, and enemata continued.

28*th*, A.M.—Upon the whole, apparently a little better; the swelling of the tongue greatly abated, and the discharge of saliva much less profuse. The membrane of the nose also was assuming its natural appearance, but the discharge from it was a little increased. She lies down naturally, and rises without difficulty. The same course of treatment pursued.

P.M.—The swelling of the tongue has entirely subsided, and the unnatural discharge of saliva is stayed; the intermittent pulse is established; and the dung is pultaceous. She has eaten a little hay to-day, and taken a small bran mash, and also continues to drink a little of the gruel. No medicine.

29*th*.—Apparently slowly recovering: dung still pultaceous. No medicine.

30*th*, A.M.—Strangely altered. The extremities, which had hitherto been of their natural warmth, or rather more than that, were now cold; the pulse quick, small, and annihilated by the slightest pressure; the membrane of the nose singularly livid; the breathing very laborious. She lies a good deal stretched out, but can raise herself at her pleasure. An idea of fever of a typhoïd character now struck my mind, and I recurred to the treatment of that stage of influenza in which there was evident collapse, and of which I had had a great many cases, only one of which was lost. The following ingredients were made into a ball and given :—Two drachms each of gum myrrh, gentian and nitre, and one drachm of emetic tartar. I had her legs well hand-rubbed, and flannel bandages put on.

P.M.—No better. The above dose repeated.

31*st*.—About 6 A.M. she died.

Post-mortem Appearances.—The lungs were slightly congested. The stomach, when laid open, emptied of its contents which were in a fluid state, and slightly washed, presented a high degree of inflammation throughout the whole of the villous coat. There

were several ecchymoses, or rather protuberating blotches, presenting uneven fungous growths of a brilliant red colour, about the size of a small pea, and closely set together. The largest of these blotches was nearly round, and measured four inches in diameter; the others varying in size from a shilling to a half-crown. There was not the slightest trace of ulceration or the formation of matter: they were of a livid colour within, and easily scraped off with the finger-nail. The cuticular membrane in various places was corroded, and the remaining part easily peeled off from the subjacent membrane. Where corrosion had taken place the mucous membrane was of a dark purple colour. There were also a few ecchymoses on the lining membrane of the small intestines, but not a vestige of inflammation in the œsophagus. All the other parts had a healthy appearance except the ala of the liver adjacent to the stomach; this was approximating to a clay-like colour.

Being questioned by the owner as to the cause of death, I asserted that there were appearances of poison; and Mr. Chapman, a surgeon, and well versed in comparative and morbid anatomy, was at my request immediately sent for; and he (after examination) agreed with me that the animal had been poisoned; but there was some difference between us as to the substance that had been used. One of the servants had previously told us that the groom—who was an obstinate, perverse fellow, and dismissed on the morning on which my services were first required—had given no less than one pound of saltpetre in less than a fortnight, in order to cure the cold under which the mare was labouring; and as an essential adjunct thereto, he had galloped her every day.

[The mare was poisoned, and by the nitre so absurdly administered by the groom.—Ed.]

A CASE OF THE MOST VIOLENT COUGH, AND THE PERFORMANCE OF TRACHEOTOMY IN A COW.

By "A Yorkshire Farrier and Cow-leech."

I should not have taken the liberty of writing to you, were it not for the high respect I have for you as editor of the work on Cattle, and the love which I have for veterinary science. I am sure that I shall not offend you when I state that you have not included all the diseases of cattle, and particularly one that is frequently fatal; I mean inflammation of the heart, and which, I think, must prevail in most parts of the globe.

You mention, at page 350, in "Cattle," two cases of what you call inflammation of the pericardium, but which were equally so inflammation of the heart itself; and the animals died because the heart was inflamed. You say that these diseases are very difficult to be detected in their early stage; but I have had to encounter many cases of what I call inflammation of the heart, and which I have always considered must be cured at the first attack, or not at all. In the first case of this description that came under my notice, I discovered certain symptoms that, ever since, have prevented me from being at a loss to discover the true nature of the disease; so that if the animal was not cured in a day or two, I could be satisfied that I was discharging my duty in recommending that it should be destroyed. When destroyed, effusion in the pericardium has always been found. The above disease, symptoms, progress, and treatment you shall have at another time. You have inserted part of a former communication of mine in your last Number, page 543, and you desire my name and address. Well, sir, I have no particular objection to giving you my name; and I am sorry that you have it not in your list of veterinary surgeons, being a great lover of that science.

I will tell you how I became one of the vulgar or common farriers, as old Bracken calls them:—My father was a respectable farmer, but loss of cattle and other disappointments much reduced him; and it was my lot, at fifteen years of age, to go and live with an uncle, who was in extensive practice as a farrier and cow-leech. I remained with my uncle about five years, during which time I became greatly attached to the study of the diseases of the horse, the cow, and the sheep. I then engaged with a large farmer to look after his horses and cattle, besides a flock of sheep varying from 500 to 1000. I continued with him also about five years, and then came to my present residence, and from little to little I have accumulated a pretty extensive practice as a farrier, still holding communication with my uncle, who is independent. Thereby, now, sir, I should very much like to change the terms farrier and cow-leech into veterinary surgeon; and, therefore, if you will kindly inform me of the rules of the Veterinary College, and the requirements, and expense, and time necessary to become a member of that establishment, you would oblige me. And now I will give you a case or two that, perhaps, may be rare to you.

On *April* 14*th*, 1836, I was desired to examine a cow. I found her with her muzzle extended as far as it possibly could be, coughing incessantly—a discharge of saliva from the mouth, and of fœtid matter, mixed with half-masticated food, from the nose. I thought at first that there was some obstruction in the

pharynx or gullet; but, on examining, I found that both the submaxillary and parotid glands were much swollen. The cough was so violent, that she ejected her urine at each paroxysm of it, and pawed the ground violently with her fore feet. I inquired how long she had been in this state, and, to my great surprise, was told about two months. I imagine, however, that I now saw her in one of her most violent paroxysms. I told the owner that I was convinced there was something in her throat, and that I would immediately find out what it was, if I could: so, with the assistance of two men on each side of the cow, I introduced what I call my "mouth extender," an instrument much in form like a woman's patten, with an ear on each side about six inches long, and a strap in each to buckle over the poll. With the help of this instrument I examined the back part of the mouth and the whole of the pharynx, but no foreign body could I find, only considerable swelling about the larynx and back part of the mouth. I then called to mind all the diseases that could affect these parts, but I could not fix on any thing satisfactory.

On the following day I cast the cow, and examined her again, and introduced a probang up the nostrils, as there seemed to be the greatest obstruction. I likewise opened one of the nostrils at the lower part, and introduced my finger. After all my examination, I could only satisfy myself that the swelling was more considerable on the off side than on the near. I applied a blister all round the throat, from one ear to the other.

16*th*.—The blister acts well. The discharge from the nostrils is not so fœtid; but there is no relief to the throat.

20*th*.—The discharge from the nostrils has ceased, yet the animal is but little better in other respects. There is no constitutional derangement; little or no fever; but the cough is as urgent as ever.

26*th*.—No change. I proposed tracheotomy, but the owner would not consent, being quite assured that such an operation must kill the beast.

May 8*th*.—No amendment having taken place, the owner consented that tracheotomy should be tried. The cow was taken into a croft adjoining the house. Nearly twenty spectators were assembled, the majority of whom expressed their disapprobation of the operation in no measured terms. "What! cut the windpipe? If that is cut, the cow must die in a moment." However, I set to work; and the operation being performed, the cow got up, went away perfectly cured, began immediately to graze, and not a cough or hoose was heard, although I staid with her more than an hour.

9*th*.—She was almost as bad as yesterday: the tube had be-

come obstructed. I took it out and cleansed it, and she was again relieved.

28*th*.—The cow having been so long ill, has, by this time, lost much of her flesh, and the owner is disposed to part with her. I intimated to him that I thought the case was a rare one, and that, in order to satisfy myself of its real nature, I would give as much for her as any one else. He accordingly sold her to me, and I brought her to my stables. I again examined her; but could not find any thing more than I had done before. I then introduced a seton, as nearly as possible to what I considered the principal seat of disease, round the trachea, and between the trachea and the gullet, and as nearly as possible to the commencement of both. I dressed the setons with two parts of spirit of turpentine and four of pale oil, and applied the same all round the throat, at the same time giving some internal medicine. I continued this treatment ten days, when the cow was so much improved that I thought she might recover. We went on eight days more, at the expiration of which she did not appear to be so well.

By this time I began to be a little tired of my patient, and also to despair of effecting much good. Nevertheless, as it so happened that her keep cost me but little, I still continued to dress the setons, and to embrocate the throat. The cow always ruminated, but ate little, apparently from the difficulty and pain of swallowing. At the end of ten weeks I destroyed her.

On post-mortem examination, I found, near the entrance of the trachea and throat, a ball of grains, about the size of a hen's egg, and about two inches from the entrance into these tubes. It was as hard as it was possible for the inflation and pressure of the tubes to make it—about a middle line between the trachea and the throat, and rather on the off side, firmly covered and closed in at least half an inch within the muscles and integuments of the parts, and no orifice remaining. There was, likewise, an ulcer in the left lobe of the lungs, about the size of a man's double fist, and containing a very dark-coloured fœtid matter. The other viscera were heathy.

[Our correspondent has unknowingly but most correctly described a case of the presence of foreign bodies in one of *the guttural pouches* in cattle. It is a disease of rare occurrence in cattle, because the cavities are comparatively small in these animals. The cause of the entrance of these bodies has never been satisfactorily stated: possibly some violent effort at swallowing too great a portion of food—possibly violent coughing during the act of deglutition. Inflammation is speedily set up,

which is soon communicated to the rimæ glottidis, or the larynx generally, and then the incessant and distressing cough. Ulceration takes place in the guttural pouch from the continued presence of the foreign body, and hence the purulent and fœtid discharge from the nostrils. After a while, and no great while, adhesion takes place between the ulcerated lips of the pouch, and, as our correspondent well describes it, the intruder becomes "firmly covered and closed in, at least half an inch within the muscles and integuments of the parts, and no orifice remains." As far as our limited experience goes, a cicatrix remains, although, perhaps, not found without some little difficulty.

Nothing but an operation of a serious and difficult nature will here avail, and which our correspondent will find described in page 396 of Cattle.

We insert this communication with a great deal of pleasure: it does him much credit. We respect him for the zeal which he expresses for his own improvement, and the improvement of his art; and, if circumstances will admit of it, we urge him to act up to the good resolution he has formed. His name and abode—we thank him for the knowledge of them; but we shall not make them public until we again hear from him.] Y.

ON THE EXPANSIBILITY OF THE HORSE'S FOOT, AND THE PRINCIPLES OF SHOEING.

By Mr. J. Carlisle, *Wigton, N. B.*

On reading the title of the first paper for discussion in the Veterinary Association this season, I was highly pleased to find a subject so important as the shoeing of horses; an operation that stands high in the scale of veterinary science. I fully expected that the debate on so valuable a subject would have thrown some new light on the art, highly creditable to the veterinary surgeon, and truly valuable to the student. What a fine field was here open in an association like this, founded and governed by the first-rate practitioners in the land! I fully expected something of universal estimation, but lo! what a result! The old system of shoeing, with the addition of a leather sole, is yet to predominate, and the expansibility of the foot and the descent of the sole to be completely denied! I confess that this is strange doctrine to me; and I would ask, Are the functions of the foot to be utterly denied or destroyed? Is the navicular bone neither to ascend nor descend? Are the highly elastic laminæ to remain stationary, and the action of the lateral cartilages to cease? This must be the case if the expansibility of the foot is denied.

Now, I would ask, What would be the consequence, if the contents of the horny case, consisting of bones, ligaments, tendons, nerves, and bloodvessels were pent together by an unyielding material? What would the superincumbent weight and concussion be guilty of then? Complete destruction! What can a Clark and a Turner say here? I regret that my friend Mr. Turner did not take up the argument more zealously, and by sound reasoning prove the utility and practicability of the unilateral method. So far as the harmony and welfare of the foot of the horse are concerned, this system stands unrivalled. I wish, too, that Mr. Hallen, of the Inniskillen Dragoons, had been present during the discussion, for I feel confident that some very valuable and practical observations would have been advanced. I have heard that gentleman defend the utility of the unilateral shoe in the presence of Professor Sewell in a very clear and scientific manner; and Mr. Sewell's reply was, that he approved of the system very much, and believed it to be a good one.

Now, much has been said respecting the unilateral method, yet no one was bold enough to bring it on the carpet during the discussion. Has it fallen into disrepute, and the universal fetter, with the addition of a leather sole, become the order of the day? I hope not. For my part, I will oppose the system of driving four nails in each quarter of the shoe with all my might. As far as regards the leather sole, I must confess it indispensable at times: I have witnessed its good effects when actually necessary; but, as a general applicant, I regard it merely as an additional expense, and productive of more evil than real benefit. It may do for the streets of London, but for the country, practice has taught me that it is a real failure.

To the preparatory process of the foot, for the adaptation of a shoe, I agree with Mr. Charles in some points; but Mr. C. advances a little contradiction in another part of his theory, which I cannot consent to. Circumstances alter cases, and require variation. Does not the natural formation of the foot require our strictest attention? Who has not observed the progeny of a certain horse predisposed to contraction of the feet? Have we not seen the unshod colt with his contracted heels, his concave and unyielding sole, his diminished and unhealthy frogs, and badly developed cartilages? And has not the offspring of some horses been subject to splints, spavin, ringbones, &c.; and another family susceptible of taking on diseases of the eye, such as cataracts, ophthalmia, &c.? Have we not observed and regretted that such a promising colt should be so afflicted?

Now, suppose that a colt is brought to a veterinarian to be shod, with his feet suffering from all the bad consequences of contraction, so far as structure is concerned; how would you

proceed to relieve this oppressed and delicate organ? Would you not, in the first place, remove the superabundancy of horn—I mean, thin the sole, and open the commissures, and apply the unilateral shoe? and what will be the result? The sole descends, and with it the internal parts of the foot; the cartilages are brought into action; the heels and quarters expand; the navicular bone retreats from its heightened situation; the frog becomes more prominent and of a better quality; the lateral cartilages more stout, which adds materially to the circular form, and we obtain, as it were, a new organization of the foot.

Now, I just think I hear some of our gentlemen vets. making use of the following words:—"Well, with all his fine-spun theory, he advances what he cannot accomplish." I must however inform them, that they are practical observations, accomplished by the labour of my own hand; and it would be no disgrace if all veterinary surgeons could use the drawing-knife and hammer, and had made themselves well acquainted with the proper formation of shoes, and the healthy and morbid structure of the foot of the horse.

With regard to some observations made by our worthy President, I must say a word or two. In speaking of leather soles, he says, "my mare has been shod with leather these fourteen years, and her feet have yet the appearance of those of a five-year-old horse." Now, let us next take the labour of his mare into consideration. Does her work exceed five miles a day? I should be disposed to think not: then, what is the utility of the oriental shoe he so strongly recommends? What would a Paddington coachman or an omnibus proprietor say of it? I feel surprised that such an opinion should have been broached by the first pathologist of the day, a gentleman to whom the profession is greatly indebted. Should this catch his eye, I hope he will pardon my freedom.

As to the tips spoken of in the discussion, in my opinion they can be of little or no use to the working horse. They may serve for a horse at grass, or for one to scamper in a straw-yard; and even there may be productive of great mischief to an animal with long oblique pasterns, weak and badly developed ligaments, and low heels. They are sometimes applied to the foot of the race-horse, and considered by a few to be superior to the plate that extends to the heel. I have heard a nobleman who stands high in turf matters, and who had a fine horse engaged in a race, and which was plated with the tip, after the first heat order his groom to have those —— tips taken off, for they made the horse into a rocking-machine. "Remove those tips immediately," said he, "and make him a plated horse*."

* Plates extending to the heel.

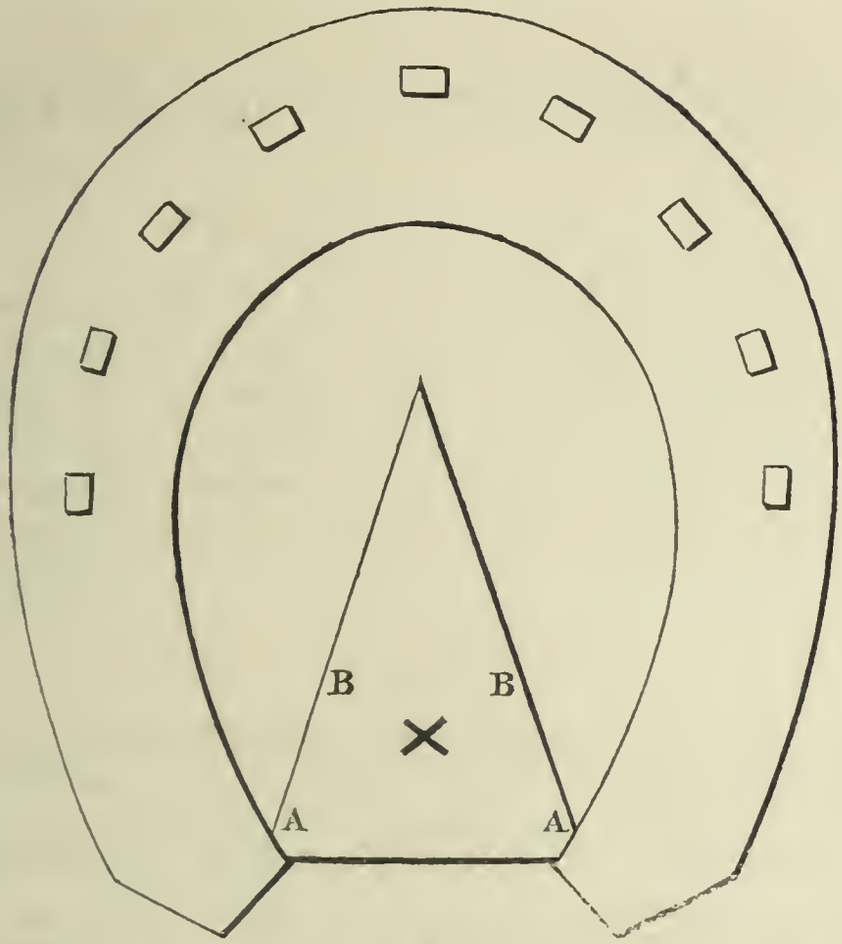
I would ask any person who practises the unilateral method of shoeing, if he ever observed a fissure to exist in the exfoliating part of the sole, extending from the point of the frog towards the toe. This I very frequently observe in a foot about a month shod, and attribute it solely to the expansibility of the foot; therefore I differ widely in opinion from those gentlemen who deny its expansion; yet, let it ever be kept in view, that if I differ in opinion with any one of the Association, I do not wish to make one rude or unpleasant allusion; but my sole aim and wish is, that the discussions of the Association may be continued with that amicability which is calculated to give valuable information to every practitioner, student, and lover of the science.

ON THE NON-EXPANSION OF THE HORSE'S FOOT.

By Mr. Morgan, *of Ross, late of the Borough.*

Sir,—In reading your last Number for January, I felt much interested in the report of the Association, and was not a little surprised at Mr. Turner's observations in the second debate, from the perusal of which any one would conclude nothing had been published either to prove or disprove the expansion or non-expansion of the horse's foot. If he will refer to the *Lancet* of the 28th of February, the 14th of March, and the 9th of May 1829, he will find a detail of some experiments instituted by me for that purpose. I have sent a copy of these letters, bound, for the library of the Association, through our worthy Secretary. Should you deem them worth reprinting in The Veterinarian, they are very much at your service; and, before I quit this subject, allow me to express my regret, that they were not originally sent there, that being their natural and proper sphere. Leather soles I have extensively used, and can bear testimony to their great value; but I consider them as almost secondary to that of the felt sole, which they are the means of keeping on the feet, when both are nailed on together, after the felt has been smeared with tar, on the side which is to come in contact with the foot. This felt is a coarse manufacture, used for shipping, and sold in sheets, by Mr. Taylor, of Bow, who has a patent for it: we used to get it through Messrs. Borrodaile, of Barge Yard, Bucklersbury.

Cut a piece the size of the foot, to correspond with the leather sole, then a less one of the form annexed; sew the two pieces



together, where I have made a X, so as to leave the sides loose "of the small piece," to be pressed down into the bars, in the act of applying it to the foot (*see* A B). When used in this way under the leather, from its exceedingly elastic nature, it forms a most complete cushion for the foot, and it is next to impossible for any foreign substance to get under it. The expense is very trifling—about one shilling per sheet, which will cut out many soles and frog pieces; the remnants we used to pull to pieces for charges, and as a substitute for tow.

Before concluding, I will just mention a case that you have brought to recollection, by your notice of Dr. Rayer's book, which, perhaps, you may have an opportunity of further investigating, and which I regret I had not a chance of doing before I left London. The case of the horse I knew. I attended it. The animal was glandered. The man whom I was informed had taken the disease from him was in St. Thomas's Hospital in November last.

[We thank Mr. Morgan for the hint, and will endeavour to obtain some account of this case.—Y.]

THE NON-EXPANSION OF HORSES' FEET.

By Mr. Caleb Morgan.

[We avail ourselves of the kind hint of Mr. Morgan, and present our readers with his first letter on the expansion of the horses' feet. In justice, however, to the subject and to our friends, we shall in the next number insert the reply of Mr. Clark, and the rejoinder. We shall, however, confine ourselves strictly to the question at issue—the expansion or non-expansion of the foot—avoiding all other matters that were incidentally referred to by those gentlemen.—Y.]

Aware that most of your readers are interested in the safe-going of their horses, and that anything which can tend to elucidate the much-agitated question of foot lameness, or be productive of practical results in the shoeing or treatment of their horses' feet, cannot be uninteresting to any class of the community, I enclose the enclosed paper for *The Lancet.*

The expansive quality assigned to the foot, having led to many errors in these matters, I propose, first, to endeavour to clear away the mist which has enveloped it, and, at a future opportunity, to pursue the subject matter in its practical bearings, and to point out what I have found to be the cause and best preventives of foot lameness.

On reading the November number of *The Sporting Magazine,* I was much surprised that a correspondent, who styles himself "Nubia," should have asserted that the foot of the horse expands the eighth of an inch, or more, every time it comes in contact with the ground. If your readers will excuse the pun, I really thought he must have been *in nubibus* when he hazarded such an assertion. I draw my inference from rather an extensive experience; and, having been in the habit of continually dissecting feet for some years past, and most devotedly in search of facts and information on these matters, it is singularly unfortunate I never could discover this much-talked-of expansion, or opening and collapsing, or shutting of the foot of the horse.

It has been too much the fashion to take this expansive quality, wrongly assigned to the foot, upon trust, without submitting it to the test of actual experiment; and "Nubia" has certainly not smoothed the way much for trying it, when he informs us, that it can be tried fairly only on the feet of horses that have

never undergone the much-dreaded operation and baneful effects of shoeing! and, as I understand him, they must be well-bred ones. That the laminæ elongate or descend, I am prepared to admit, thereby causing the vein, as the smiths call it, to descend also; and that if the frog and heels meet the ground, as they ought to do, the side cartilages have motion to a certain degree.

Having occasion to be at Mr. Theobald's, of Stockwell, and aware that every facility would be offered me to try the experiment, I determined to measure the feet of some of the colts with the calipers, as "Nubia" describes he measured his mare's feet. There being plenty of scope for trying it fully and fairly on some of the best bred stock in England, that never had been under the influence of the "iron prison and wedges," as "Nubia" terms the shoe and nails; and that it might be tried fairly, I got a friend to stand by and see me perform, who is not only a good mathematician, but who is frequently and practically in the habit of using calipers and compasses. We caught four of the young horses out of the paddocks, and applied the instruments to each of the fore feet repeatedly. The result was, clearly to my friend, myself, and the head groom (who merits our thanks for the civility and anxiety he evinced that the experiment might be fully and fairly made), that there is not an atom of difference in the width of the horse's foot, whether on or off the ground—whether standing on one or both fore feet, or whether with twenty stone on his back, or nothing! and that all this tirade about expansion is entirely fanciful and theoretical. Three days afterwards, I repeated the same experiments on the same feet, with precisely the same results. A horse came to be shod with a remarkably good foot; I placed a man between eleven and twelve stone on his back, held up one foot, and then tried the experiment—same result as the others. I have often occasion to rasp the quarters to the blood, previously to turning out; and when the frog has been the chief support to the lateral parts of the foot, have tried the experiment on many of these, whilst made to stand on one foot, and, in several instances, with a couple of men on their backs, yet no expansion whatever took place.

CONTRIBUTIONS TO COMPARATIVE PATHOLOGY.

No. XVIII.

By Mr. Youatt.

EPILEPSY—DEATH OF THE MOTHER AND THE FŒTUS—WOLF.

April 22*d,* 1834.—She had been put into a smaller den for several days, while her proper abode was painted. To-day she was brought back. There was a great deal of struggling about it, and she had scarcely reached her den ere she fell into violent fits. Cold water was plentifully thrown over her, but it had not the slightest effect. Three grains each of calomel and emetic tartar were then placed on her tongue, and washed down with a little water: she was placed in her inner den, became sick, and in half an hour afterwards the fit was over.

24*th.*—She has not had any fits since; but she is not herself. Give two grains each of calomel and antimonial powder.

25*th.*—She is much depressed, and will not feed. The bowels are constipated. Repeat powder.

28*th.*—She is not well. She eats a little; but keeps herself curled in her corner. Repeat powder.

30*th.*—She will not now eat at all, and she cannot be forced.

May 2*d.*—When seen in the morning she did not appear to be worse, but she was found dead an hour afterwards. The head was not examined—it was left for Mr. Holmes. The lungs, liver, and stomach were sound. The intestines, and especially the smaller ones, exhibited considerable inflammation. The uterus was in a manner decomposed. It broke when an attempt was made to lift it. There were eight young ones in it, all of which seemed to have been dead several days.

DIFFICULT PARTURITION—RUPTURE OF THE UTERUS—SAMBUR DEER.

June 9*th.*—She came up from the farm with the other animals, no one knowing or suspecting that she was pregnant. It was attempted to put her with some sheep, as we were then pressed upon for room. She was frightened, and dashed herself about. The membranes presented themselves, and broke. The fawn was falsely presented—the belly towards the spine of

the mother, and one leg protruded. A cord was fastened round the leg, and the head searched for, and found reflected back on the side: it could not be moved, but, after many an effort, a small cord was passed round the lower jaw. No motion of the jaw was felt, and it was evident that the fœtus was dead. The throes came on, but not so strongly as could be wished, and a trial was made to extract the fawn. The lower jaw almost immediately gave way; and we had no longer any chance. Give scruple doses of the ergot of rye every two hours.

10*th*.—There is so much emphysematous enlargement of the fœtus, that it is impossible to introduce the hand into the passage, or return the leg. The ergot of rye did its duty, and the frequency and force of the pains were increased; but the head being doubled back on the side, this increase of uterine action is doing harm by exhausting her strength; and the alternative evidently is, either to attempt the Cæsarean operation, or, as this emphysema is the precursor of speedy decomposition, to support her strength until the fœtus in a manner falls to pieces. Therefore suspend the exhibition of the rye, and support her with warm gruel and ale.

11*th*.—No advance towards delivery has been made, nor can be, I fear: she is sadly exhausted, and refuses all food. Decomposition is rapidly going on. The leg which impeded the passage came off at the knee, after very little force had been used. I could not get my hand into the uterus. Possibly the remainder of the leg may be drawn away to-morrow, and I shall be able to act upon and break down the rest: but will she live until the morrow?

12*th*.—She died about two o'clock this morning. We found very great peritoneal inflammation, and some of it of a chronic kind, with adhesions. Two quarts, at least, of dirty reddish-coloured fluid were in the abdomen. There was considerable inflammation of the peritoneal coat of the rumen. On bringing the uterus into view, a considerable rupture was perceived in the left horn, near the fundus. The edges were black and putrid, and it was evidently an affair of several days' standing. It was probably done at the moment of fright. The head of the fœtus was thrown back, and lay half way along the side of the little animal, shewing that there was no possibility of moving it. The whole was one mass of putridity—the limbs dropped asunder as soon as lifted, and the bones of the head were as beautifully and perfectly separated from each other as they could have been by several weeks' maceration. The whole of the uterus was in a state of inflammation running on to gangrene. There was not,

from the beginning, the possibility of saving either the young one or the dam.

My hand and arm were, in the early stage of the case, often and long in the vagina and uterus of the animal. The fœtus was even then in a state of decomposition. The numbness again and again produced by the action of the uterus was very great. Either my hands were not quite sound, or, from the effect of the pressure, I became inoculated, and a cutaneous eruption, attended by considerable inflammation and swelling, appeared on my arm, and particularly about the wrist: I could scarcely bend my arm.

Dec. 1837.—It was long before I could conquer the eruption, and to the present hour it occasionally returns. My assistant's arms were in the same condition; but he has quite got rid of the evil. The head keeper shared the same fate.

THE VETERINARIAN, FEBRUARY 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

We are neither surprised nor sorry that the debate on "the principles of shoeing" should have been somewhat strongly animadverted upon by a few of our country practitioners. It was a noble subject; but not quite fitted for such an assembly, and the time allowed for its discussion. It involved too many interesting yet difficult points; and then, as is generally the case, the plainest and most superficial are seized, and those on which depended a correct and useful knowledge of the physiology of every important part of the foot, the art of maintaining the full perfection of its functions, and of relieving its occasional ailments, were altogether untouched, or treated with a degree of carelessness and haste unworthy of them.

The foot!—the principles of shoeing! How many essential and distinct questions might be mooted with regard to them, and each occupying its evening, or more evenings than one, pleasantly and profitably! Well; we acknowledge that it was not the best of

our evenings—that it was a subject the greater part of which must of necessity be hastily passed over, and that we unfortunately occupied ourselves with points of comparatively inferior value. It will be a lesson to us. We have had many a debate highly creditable to us, and we will have them again. We have now felt that the eye of the public is upon us, and we will not forfeit the honours which in our first year we won.

What a desideratum among us at the present moment, and from a man perfectly versed in the anatomy of the organ—the mechanical use and power of its different parts—their exquisite mutual adaptation and bearing—the means by which either the perfection of the instrument may be preserved, or the occasional injuries which it receives to a very considerable extent alleviated;—a man who writes from love and admiration of the subject, and not for the sake of supporting his own just or unjust claims;—what a desideratum among us we say, at the present moment, would be a treatise on the foot of the horse! It is really disgraceful that so many years should have passed away since the establishment of the Veterinary College, and there should be so much and increasing difference between us as to the design and function of many parts of the foot.

The Veterinary Medical Association may be of essential service in preparing for this, by debating on certain *strictly defined portions* of this beautiful machine. Blaine, Clark, Coleman, Goodwin, Percivall, Turner, and possibly, to a very slight degree, the author of "The Horse" may have partially laid the foundation for such a work; but some of them could enter only briefly into the subject, because it formed a mere part of a more extensive treatise; and others were advocating peculiar views of their own, instead of taking that deep, and broad, and unprejudiced contemplation of the whole, which alone could render their labours essentially useful. There is a crown of unfading honour for him who will execute this task; but the foundation must be science, candour, and forgetfulness of self.

Among other letters which we received, is one from "a Stranger," and "who has never written to us before." The mo-

ment, however, we glanced at it, we asked ourselves, What reason can a stranger have to write a disguised hand? for this was evident, and to a very laboured degree: and this thought had scarcely passed through our minds, ere we recognized in the "Stranger" an old acquaintance, and who had not always been a very welcome one. He is an advocate for eliciting from the profession something that may be useful on this question of the principles of shoeing. "Something should be established beyond dispute," says he; "for while Coleman"—we are using his affected, or, as we suspect, his natural way of speaking of persons and things—"would have frog-pressure, Clark would have none; and Dick, of Edinburgh, declares it is of no consequence whether the frog has pressure or not, can these gentlemen, with such discordance of opinion, conduct horse-shoeing equally well?" Allowing him his premises, which we apprehend would be disputed, the question is a very fair one, and easily answered; and would more fully prove the necessity of having something, at this late period, definitively settled on these points.

When this writer goes farther, and states other opinions of one of these gentlemen, and contrary to those which he has recorded in print, we must require his name and address, although, as we have already said, we believe that he is no stranger to us. If he means fairly, he cannot object to this.

We have received from another correspondent a well-reported case of disease. We shall readily insert it, if we are enabled to append his name to it. Without this, he must be aware that it cannot be useful to the reader, or quoted as authority.

We have lately again and again urged our brethren to mark the signs of the times. The establishment of the agricultural societies that have so numerously sprung up within the last few years, and more especially that of a national agricultural society, of which there is so fair and immediate a prospect, will or may effect a great change in the connexion between the veterinary surgeon and the farmer. In the working out of the views and purposes of these societies, the veterinarian would always be a

useful associate, and often his services would be indispensable. Can it be doubted that one of the first and most determined objects of this noble society will be, to obtain for their cattle and sheep, unrivalled in every country of the world, an immunity from some of the diseases by which thousands of the one and millions of the other are now swept away?

Will they find in the veterinary surgeon an associate capable of accomplishing these important purposes? Has the principal veterinary school been conducted with a view to their accomplishment, or so as to afford the most distant hope that it may be effected? Has—alluding to the beautiful paper of Mr. Mayer, in the present number—has the system of our education been sufficiently carried out to diffuse that extent of *real veterinary knowledge* which is absolutely necessary for the interests and welfare of the science? Most certainly not. He who now practises on the diseases of cattle and sheep as well as the horse, as almost every country veterinarian is compelled to do, has either applied the knowledge he had acquired of the horse to the treatment of other animals; or adopted, with certain improvements, the opinions of his forefathers; or gleaned here and there from the various periodicals and other publications which, fortunately for him, have lately appeared; or gone to other schools, or attended other lectures; or submitted for awhile to a course of self-degradation and blundering practice which he is ashamed to think of. Is this the way in which the veterinary surgeon is to accept the proffered alliance of the agriculturist? or, while this state of things exists, will that alliance be proffered at all?

What, then, is to be done?—Revert to the original constitution of the Veterinary College, which by some means, useless now to inquire into, has been sadly departed from, but never abrogated—which is still the law, but not at all the practice, of the place. "The grand object of the institution has been, and is, to form a school of veterinary science, in which the anatomical structure of quadrupeds of all kinds, horses, cattle, sheep, dogs, &c., the diseases to which they are subject, and the remedies proper to be applied, might be taught; in order that by this means enlightened practitioners of liberal education, and whose whole study has been

devoted to the veterinary art in all its branches, may be dispersed over the kingdom, on whose skill and experience confidence may be securely placed." This—*the original constitution of the Royal Veterinary College, and including the associated sciences which must necessarily be taught*—is every thing that the agriculturist can by possibility want.

What then is required?—a subversion of the College? No; but that which is occasionally necessary in too many human institutions—a return to its original and legitimate object.

A few years ago, when certain lectures were attempted, and certain publications appeared, on the diseases of cattle, sheep, &c., Mr. Coleman announced that his lectures would extend to "the general functions and diseases of other domesticated animals" beside the horse; *a pledge which has never been to any essential purpose redeemed.* Mr. Sewell delivers certain lectures which profess to include the diseases of cattle and sheep: but his lectures are essentially on the *surgical* treatment of the horse, and these are necessarily subsidiary, and can never occupy that prominent character which their importance demands.

What, then, is to be done in this new state of the agricultural and veterinary world? Why—we repeat it—revert to the original constitution of the College, which will make the veterinary surgeon every thing that he ought, or that the agriculturist can wish him to be.

We have no authority for what we are about to assert,—it arises simply from observation, but we think not erroneous observation, of persons and things;—that when, in process of time, the direction of the College shall fall into other hands, *this will be cheerfully yielded:* and again we say, as in the Association, blessings on the man, whoever he may be, by whom this is effected! but why should not the career of the Professor of forty-six years' standing be nobly closed by such an act of justice to the veterinary surgeon and to the country?

As a pleasing sample of the good feeling with which the agriculturist and the veterinary surgeon will meet, we will relate an occurrence that took place in December last. Mr. James Corbet, after having been a pupil of Professor Dick, and graduated

at the St. Pancras School, and attended the lectures on the maladies of cattle, sheep, &c., at the University of London—after having, in fact, availed himself of most of the advantages which the reverting to the constitution of 1791 would give to every veterinary pupil in the English school—returned to his native village, Kilsyth, until some favourable opening for establishing himself elsewhere might occur. Kilsyth had never had a member of the veterinary profession residing nearer to it than at Glasgow, twelve miles off; and its inhabitants had often had occasion to lament this, from the loss of valuable animals that might probably have been saved, had professional assistance been at hand. Surrounded by the friends of his youth, and mingling among them, many cases soon occurred on which they ventured to apply to him for advice. It was cheerfully given; but the professional fee was refused. "I am but a bird of passage among you now," he used to say: "you must not cause any thing unpleasant to mingle with my recollections of you by and by. Put it down to auld acquaintance sake."

Time passed on, and he at length heard of a situation that promised to be advantageous to him, and he prepared to take his departure from Kilsyth. His friends invited him to a parting dinner, as an expression of their respect. They had two other motives, and both of them were good ones.

Mr. Wallace, of Auchenvole, was in the chair. We cannot tell how many were present, but the guests were numerous, for there were two croupiers, Mr. Ballantine, of Shirva, and Mr. Storrie, the surgeon of Kilsyth. They consisted, in fact, of all the farmers and gentry and tradesmen in Kilsyth and its neighbourhood.

After dinner, Mr. Wallace addressed Mr. Corbet, and told him that the inhabitants of Kilsyth and its environs had long felt the want of a member of his useful profession among them, or at no great distance from them; that they were glad when he returned to reside for awhile among his old friends; and they had ventured to hope, although they, perhaps, had no right to expect it, that he might be induced to take up his permanent abode with them. Although he would not assume his profes-

sional character at Kilsyth, he had been kind enough to give them his valuable assistance in a great many cases, and which, from his skilful treatment, had terminated well. They could not, however, part with him thus. As a mark of respect for his professional abilities and his private worth, and of the confidence which, if they had opportunity, they should continue to repose in him, they begged to present him with a silver snuff-box and its contents. And now they would venture once more to hope that he would consent to practise, for a limited period, in their neighbourhood; and that they did trust, that, by their united endeavours, he might find sufficient inducement to fix his permanent residence among them.

The box, which contained a considerable sum of money, bore the following inscription:—

THIS BOX, FILLED WITH GOLD,
WAS PRESENTED TO
MR. JAMES M. CORBET
BY A FEW GENTLEMEN IN KILSYTH AND ITS NEIGHBOURHOOD,
IN TOKEN
OF THE HIGH ESTEEM THEY ENTERTAIN
FOR HIS
PROFESSIONAL ABILITIES AND PRIVATE WORTH.
15TH DEC. 1837.

It is needless to add that Mr. Corbet continues to reside at Kilsyth.

In the course of the evening several gentlemen paid the highest compliments to the body of veterinary surgeons, and earnestly called on agriculturists every where to study their own interests, by cultivating the closest intimacy and alliance with these gentlemen.

Pleasant, like this, will be many a meeting between the agriculturist and the veterinary surgeon.

Y.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

De la Morve et du Farcin chez l'Homme:—*Of Glanders and Farcy in the Human Being. By* P. Rayer, *Member of the Royal Academy of Medicine, Physician to the Hospital de la Charité, and Consulting Physician to the King.* Bailliere, Paris and London.

Whatever may be thought of the real nature of the disease in the melancholy case of Mr. W. Turner, and which occurred in 1819 instead of 1821, as stated in our last journal, Dr. Rayer proceeds to state others, collected with most praiseworthy research, and amounting in the whole to nearly forty. Among them are those recorded by Dr. Elliotson in his valuable papers in the Medico-chirurgical Transactions. A few of them may be liable to objection. They may, like that of Mr. Turner, be traced to mere *irritation*, as in the empoisoned wounds of dissection; but in a very great majority of them, the identity of the symptoms in the human being with those of glanders and farcy, in both the acute and the chronic form, in the horse, is so complete, as not to leave the slightest doubt that man is susceptible of these diseases. At some future period we may probably translate a few of them, for they are very singular ones; but at present we will confine ourselves to the introduction of that which was the subject of so much discussion in the Royal Academy of Medicine at Paris. Dr. Rayer attended the man through the whole of his illness, and superintended the post-mortem examination. It is altogether the most circumstantial and the best case on record; and we shall give it with very slight abbreviation.

Prost, a groom, aged fifty-eight years, and of not very sober habits, became ill early in the month of February, 1837, and was brought to the Hospital *de la Charité* on the 9th of that month. No positive information could be obtained from him as to the nature of his disease; but he said he had not been well for a considerable time; and we learned afterwards that he had been compelled to keep his bed during the last four or five days.

On the 10th he exhibited the following symptoms, and which M. Vigla, the assistant surgeon, had noticed on the preceding evening:—He lay on his back, with a stupid expression of countenance, and slight impairment and disorder of intelligence. He would answer tolerably well to the first question that was addressed to him; but he would rapidly pass from it, and wander from subject to subject, without any connexion of ideas. He said that he felt himself very feeble; that at the commence-

ment of his disease he had had great heaviness and pain of the head, diarrhœa, and fever. His countenance was of an unnaturally dark hue. On the face, on the breast, and on the belly, several phlyzacious pustules were seen; and a gangrenous spot was observed on the glans penis. No petechial or lenticular typhoid spots or *sudamina* appeared or any part of him. His tongue, dry and chapped, was partly covered with a glutinous mucus. The thirst was excessive. He had had several liquid, yellow, involuntary stools during the night. The urine was discharged involuntarily—it was acid, and destitute of any peculiar smell; in fact, it seemed to differ little from healthy urine.

The pulse was small and frequent—the skin dry and hot—the beatings of the heart could not be heard distinctly on account of the noise attending the act of respiration, and which the patient could not suspend for a moment. The respiration was more frequent and laboured than usual, and the patient, from time to time, effected an inspiration unusually lengthened.

The exploration of the chest was managed as well as it could be in the exhausted state of the patient, and nothing could be heard but the *sibilant râle.* On percussion, the resonance of the chest was good, and the sick man coughed without expectoration *(sans cracher).* The nostrils, exteriorly, had a healthy appearance, and there was no discharge from them; the voice was changed, and very feeble; and there was no enlargement of the parotid or submaxillary glands, or the lymphatic ganglions of these regions.

As he lay on his back, his gaze was fixed on some particular point or object. He complained, from time to time, of cramps in his lower extremities; but the voluntary muscular action was exceedingly feeble. When I requested him to squeeze one of my fingers as hardly as he could, he could scarcely manage to bend it by the exertion of all his strength. His hearing was good, his sight unimpaired, and the common sensibility of the skin not perceptibly diminished. When he was pressed with questions, he more than once told us that his head ached. On the preceding night he had been exceedingly agitated, and attempted to get out of bed. He exhibited less impairment of intellect than is observed in the putrid stage of enteritis, attended by ulceration of the mucous follicles of the intestines *(dothin-enteritis)* or typhoid fever, but more than is often seen after the absorption of animal poison, as in dissection. It was a mental prostration of a peculiar form and character. Dr. Rayer is giving his own lucid account of the disease.

Although the rarity of typhoid fever at the age of fifty-eight, and the rapidity with which the exhaustion pursued its course, and especially the existence of the eruption, ought to have con-

vinced me that this could not be a case of typhus, I acknowledge that the suspicion sometimes occurred, whether it might not be some rare form of this disease. The diarrhœa, the character of the stools, the involuntary discharge of urine, and the *sibilant râle* favoured this supposition. I was assured that the case must terminate fatally; but, in order to afford the patient every chance, a blister was applied over the region of the stomach, and a decoction of bark was administered, united with ether.

11*th.*—My mind being pre-occupied by the peculiar appearance of the pustular eruption which I had observed on so many parts of his body, and the resemblance of some of them to those of chicken-pox (*varicella*), and of others to common papulous scall (*ecthyma*), and of others, still with the enlargements of blain, become purulent (*rupia*), and of the coincidence of this eruption with the gangrenous spot on the glans, I determined to examine, more carefully than I had done before, the whole surface of his body. I then recognized on the skin and under it various other morbid alterations. One large black gangrenous phlyctæna (*vesicle*) was situated beneath the left ear, near the insertion of the sterno-mastoidean muscle, almost as large as a twenty-sous piece. At the centre, the epidermis was irregularly elevated by a somewhat blue-coloured liquid, variously shaded. The base of this black enlargement was encircled by a ring of coherent vesicles, which had a light rose, or, in some places, a violet tint. The cellular tissue situated below the portion of skin surmounted by this phlyctæna, and that which surrounded its base, was scarcely swelled, and was without hardness, œdema, or emphysema. The skin of this phlyctæna, slightly red, soon regained its natural colour. This group of characters immediately and plainly distinguished the enlargement from the ordinary form of malignant pustule. Its contents also were more bloody than purulent, and of the consistence of syrup.

On the jaw on the same side of the face was a large pustule, with a tuberculous rounded base, but depressed in the centre, seemingly on account of the escape of a portion of its contents, and which a yellow scab replaced. This pustule was surrounded by a yellow circle, but with very slight thickening of the skin.

On the fore-arm was a large pustule full of pus, having the appearance of one of rubia become purulent.

On the right shoulder were three considerable abscesses, disposed as a chaplet, one below another. Thirteen others of the same kind were found on various parts of the body. In the greater part of these purulent depôts, there was no change of the colour of the surrounding skin.

All these purulent collections were soft, uniformly fluctuating,

without phlegmonous engorgement at their base, without any morbid heat, and without any pain accompanying them, except one on the calf of the left leg, which presented a distinct circumscribed nucleus. Three of these abscesses were opened: the pus which they contained was yellow, and holding in suspension a more solid, whiter matter, analagous to the centre of common furuncles. The other abscesses, examined after death, contained a purulent, red-coloured sanious fluid. At the sacrum, on the external part of the foot, and particularly on the malleoli, the skin presented some violet-coloured spots, seemingly the precursors of gangrene.

This collection of lesions immediately reminded me of those observed by Dr. Elliotson, and recorded in his valuable work on "Glanders in the Human Subject." They were precisely similar cases, and I could have no doubt of the nature of this disease. I requested the particular attention of my honourable colleagues to the case, and MM. Andral and Velpeau, after carefully examining the patient, adopted the same diagnostic.

M. Vigla then went to the residence of Prost, at La Chapelle-St.-Denis, and there he found that this poor fellow had slept in a stable in which several glandered horses had lately been placed, and that M. Leblanc was the veterinary attendant on that establishment. M. Leblanc informed us, that Prost, some days before his admission into the hospital, had really slept several successive nights in a stable which had contained a mare that, afterwards, died of acute farcy and glanders. The journal of the infirmary contained the following record of this mare: "La Percheronne, from Montrouge, arrived at La Chapelle on January the 27th. She had entered the infirmary at No. 1, on the 20th. It was ascertained that she was glandered, and discharged from both nostrils. There were also evident symptoms of farcy on the cheek, and at the shoulders." M. Leblanc added, that she had acute glanders and farcy, and was sent to the knacker on the 1st of February. This, of course, confirmed me in the opinion that Prost had died of acute farcy and glanders; and that opinion acquired a new degree of assurance, when M. Leblanc, having seen the sick man, took the same view of the subject, and brought it to the test of an experiment that will hereafter be mentioned.

The prostration of strength in our patient continued to increase—the mouth was open—the eyes dull and covered with mucus—the countenance of a yellow clay colour—the tongue brown—the belly tumid—the urine and fæces passing involuntarily—the respiration accelerated and loud, and the voice having died quite away. He now began to expectorate thick and glutinous matter, but it could not be determined whether this proceeded from the nose, the throat, or the chest.

The poor fellow lay in this state during the whole of the 11th, the 12th, and until 5 o'clock on the 13th of February, when he died. During this period there was no sensible enlargement of any of the abscesses—no increased gangrene of the glans, nor of the external part of the foot—no perceptible alteration in any part of the exterior of the body, and no marked change in the desiccation of any of the pustules.

On the 14th, at one o'clock P. M., an examination of the body took place. Its important results shall be related in our next journal, when we trust that we may be enabled to present our readers with an accurate delineation of some of the morbid lesions. Y.

Miscellanea.

Obsolete Canine Pathology.

Of the Diseases *of* Dogs, *and an account of several* Receipts *for the cure of their* Madness, *and of those bitten by them; by Sir* Theodore Mayern, *and Sir* Robert Gordon.

Dogs are subject to these several sorts of madness, or rather diseases:

1. The hot madness, which is incurable; they run at every thing, and then they can hold out but four days.

2. The running madness, which is likewise incurable; they fly only at dogs, and that by fits, and they may sometimes hold out nine months.

3. *La rage mue* or dumb madness, which is a disease in the blood.

4. The blasting or withering. This lies in the bowels, which are exceeding shrunk up.

5. The sleepy disease, caused by little worms in the mouth of the stomach. These dogs die sleeping.

6. The rheumatic disease. In this the head is very much swelled, and the eyes become yellow.

These five last are not properly madness, but some other disease. When thus affected, they will eat nothing, nor at any time when sick. They live eight or nine days without hurting any body, and then die of hunger. The two first diseases are communicated by the breath of dogs, as the plague amongst men: the latter are likewise contagious, but curable.

Receipts for the Bites of Mad Dogs.

The first is composed of Virginia-snake root, and the flowers of St. John's Wort, in equal parts; and to be given before the ninth day after the bite.

The second consists of rue, garlic, tin-filings, Venice treacle, digested in good sound ale or white wine. The dose from two to three ounces, to be taken every morning for nine days, after which the patient must fast for three days. The dregs that remain after expression must be applied to the wound, and renewed every twenty-four hours. This medicine must be taken before the ninth day after the bite, and was never known to fail.

We will give the third at length. Pluck the feathers from the breech of an old cock, and then apply it (the breech of the cock) bare to the wound. If the dog was mad, the cock will swell and die, and the patient will do well; but if the cock dies not, the dog was not mad. If the wounds be very small, it is proper to open them with a lancet.

Fourth. Let the patient be nine times plunged into the sea fasting, as soon as possible after the bite. Wash the bitten part with a ley composed of the ashes of oak wood and urine, and apply a cataplasm of London treacle, hedge garlic, rue, and salt.

Two other recipes are given, but they are composed of multitudinous ingredients, and must be taken on three successive mornings before new and full moons.

The Universal Magazine, 1747.

Strange Recipe to cure the Yellows in Cows.

Take one ounce of wood soot powdered fine, plantain and rue a handful of each, eight large cloves and stamp them; to which add one ounce of hempseed or a handful of the tops of hemp; and after they have been boiled in three parts of fresh human urine, or as much stale beer, and passed through a sieve, give a pint of the liquor to a cow, rub her tongue and the roof of her mouth with salt, and chafe her back with human urine.

The Universal Magazine, 1747.

The old Reputation of Salt for the Cure of the Rot.

If your sheep be suspected to incline to rot, house them as fast as you can in a large barn or sheep-cote, set round with wooden troughs, in which feed them a day or two with oats mixed with Bay salt bruised or beaten, increasing the quantity of salt till they refuse it; then feed them with clean oats for a couple of days. After that they must be served with salt as before, until their eyes come to their native colour. This, if any thing will do it, will recover your sheep.

The Universal Magazine, 1748.

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THE COMPARATIVE EFFECT OF THE ACTUAL CAUTERY AND THE SETON.

By NIMROD.

[Continued from p. 25.]

I RESUME my observations on the deeply-important question of the relative effect and merits of the actual cautery and the seton in veterinary operative surgery, together with the proceedings in the Association on the 11th of April last. I find Mr. Turner "on his legs," as the parliament phrase is, which I hope he will long continue to be, without having recourse to either of these so stoutly disputed restoratives.

The sentiments and opinions of Mr. Turner (and the same may be said of his brother) must be allowed to have great weight on the subject now before us, forasmuch as he has the credit of being the introducer of the deep cautery lesions, by which such extraordinary cures have been performed,—as Professor Sewell is of the system to which his practice is opposed, namely, the substitution of the periosteotomy knife, as applied to the legs of horses. Again: his arguments being founded on very extensive practice, in what may be called a cruelly horse-laming country, they acquire additional force; for, as Sir Francis Burdett once said in the House of Commons, "Away with your theories—*give me results.*"

The matter in dispute appears to stand thus:—Mr. Sewell says, "Make some other more useful instruments of your firing-irons, for they are no longer necessary in veterinary practice. We have a better, although not a new remedy in the seton—new only in its application. We introduced it because we did not find the uniform success which was desirable in the old one, or the actual cautery. We apply the seton to the cure of those diseases for which there was before no adequate remedy, such as strains, ossifications on the legs, splents, and injuries to the fetlock joint. In fact, we do (at the College), with the knife, with

less pain, and by a simpler operation, what you do with the firing-iron; and, moreover, diseases yield to the new system of treatment which would not yield to the old one."

Now, then, for the other side of the question, and another novelty as well. "When I undertake," says Mr. Turner, "the cure of ring-bone, or spavin, or osseous tumours generally, or ligamentous thickenings, the very moment I penetrate the tumour to a certain depth, the lameness vanishes, and the patient becomes, in a manner, a sound horse. This may be considered as a novelty in veterinary practice, but it is a true fact; not occurring in every case, yet not unfrequently seen."

Now, supposing all this to be true—it appears to me to be partly a question, in sundry cases, merely of the relative amount of difficulty and pain attendant on the two operations. For example: I have a horse lame from either of the above-named, often incurable, diseases. I am told, at the College, that the seton will, in all probability, make him sound. On the other hand, Mr. Turner tells me, the actual cautery, applied in a certain manner, has an equal chance; for, I take it for granted, the universal panacea is promised by neither of these celebrated practitioners. The one, however, neurotomizes my nag with his knife, the other with a hot iron, and there is a strong probability of a cure. Then what should I, as a commonly humane man, do in this case? Undoubtedly I should endeavour to ascertain the relative amount of suffering and peril attendant on the respective operations, and decide upon that which may afford the least—supposing, of course, the chances of cure to be equal. Still, I am here also taking for granted, that neurotomizing the part is the principal agent in the cure; whereas Mr. Turner insists on the additional aid of the artificial bandage, afterwards, as another important agent in causing the absorption of osseous or other tumours.

But another question arises here. Will the seton do all that the cautery has been found to do? For example, Would it have cured the Surry huntsman's horse of his two broken-down legs? (I confess I should much like to see this question answered—as far as it can be answered—the actual proof being wanting.) That it is the safest and the best remedy for some kinds of lameness I see no reason to doubt, and especially for those of the hip, hock, shoulder, and stifle; but I must hear more of its *general* success ere I can believe it will be allowed to replace the iron in the practice of country veterinarians, or in the stables of hunters, coach-horses, and others whose labour is severe.

In the discussion of this subject one circumstance cannot be overlooked, and that is, the sort of horse to be operated upon.

Strange to say, I never entered the Veterinary College in my life; neither do I know, to within two miles, in what part of London it is situated. But I am given to understand that a very different description of patient is generally to be met with, within its walls, to that within the circle of the country veterinarian's practice. To the science and skill of the Professors and assistants of the former, horses of wealthy persons are, for the most part, presented, to whom the speedy restoration of them is not a very material object, and, consequently, experiments may be tried on them. To the practice of the latter—the country practitioner—is almost every day presented the broken-down coach-horse, the severely-strained hunter or racer, whose owners, in the first case especially, call out for and expect a speedy restoration of such animals. It is material, then, to inquire, by which of the rival operations is this desired restoration to be most speedily procured? Mr. Turner says he has sent coach-horses to work in the space of a week, or a little more, after having fired them; and I have myself seen them in a fortnight. The result of this part of the question is a most material one. Mr. Spooner tells us (p. 153), that the country practitioner often gives the fired horse more rest than the setoned one, which the experience of Mr. Turner induces him to disbelieve. That gentleman, however, admits the necessity of deep firing in cases of broken-down coach-horses; adding the important facts, that he had rarely failed when he had resorted to somewhat *severe* measures; but that he had failed when he fired lightly, and also when he had recourse to setons.

I have already acknowledged ("*Non nostrum inter nos tantas componere lites*") my own experience of setons to legs to be next to nothing. Anxious, however, for information on so interesting a point, I seek for it when an opportunity offers. On putting the question the other day to Mr. Oswin, who has horsed the Calais and Boulogne coach the last twelve years, Whether he had ever tried the seton in place of the cautery (which latter remedy I am aware he often has recourse to)? he answered, "*Twice;* but it failed in both cases." "Is firing generally successful with you?" was my next question. "It is," he replied, "if we can give them time*." Now, it is somewhat remarkable, that setoning legs has not found its way into this part of France, where, I should say that on an average, two in ten of all hard-working horses bear the mark of having been setoned in

* Observe the following passage in Professor Vatel's paper, in your June Number, on the cautery and seton:—"The secondary effects of firing do not often begin to be manifestly apparent until two, or three, or four months, or more, have passed."

some part of their body, it being the favourite means of diversion of inflammation in all visceral diseases, as the application of leeches to the anus is in their human therapeutics.

Then, again, the race horse. When visiting Count Duval de Beaulieu, at his chateau in Belgium, last week, and looking over his *immense* stud*, I was shewn a three-year old colt that had been castrated a fortnight back, for the purpose of favouring his legs, which, last year, were in such a doubtful state as to render it necessary to stop him in his work, to prevent his breaking down. Now, to an unpractised eye, there appeared to be nothing amiss with these "doubtful" legs: in fact, it was not until I had drawn my hand the third time down what was considered the most doubtful of them, that I discovered a slight thickening of the suspensory ligament. "What shall I do with this leg?" said the count's trainer (Howard) to me; "do you think the mercurial charge would answer?" "The mercurial charge," I replied, "has done wonders for me, in cases of bulging enlargements of hunters' legs, but *I cannot prescribe for those of a race horse.* What do you yourself think of doing with it?" "Why," resumed he, "I am waiting for it to get quite cool (it was then nearly cold to the touch), when I shall run the irons over it." "What think you of a *seton?*" continued I. The trainer shook his head, apparently as ignorant of the effect of setons on the *legs* of a horse as I am of the Hindostannee language.

Now, before I would join Mr. Sewell in the general, much less total, abandonment of the firing-iron, I should like to be informed whether, in such a case as this, the seton would be more effectual; for it must be observed, there is no tampering with doubtful measures in regard to the legs of race-horses. It would be a great point gained, if such it could be proved to be; for, notwithstanding that Professor Vatel (see *June* No. p. 295), in testifying to the merits of the cautery, tells us that, when "applied to weakened limbs, it causes them to recover, to a certain extent, their former vigour, their perpendicularity, and both the *suppleness* and the firmness of their motion," still there is, I fear, always more or less rigidity in fired legs, which is not favourable to the race-horse—at least when the operation has been severe. In fact, I can only call to mind one instance of a racer beating a good field of horses, and winning a large stakes, after having been deeply fired for what trainers call "a very bad leg†."

Again, when visiting Viscount Kelburne, in my Scotch tour,

* Altogether nearly 300 horses.

† Claude Loraine won the Gloucestershire stakes at Cheltenham after this operation.

Mr. Fryer, the V. S. residing near Bedale, in Yorkshire, and of whom I before had occasion to speak, and in testimony of his professional skill, came to his lordship's seat near Glasgow, for the purpose of firing one of his race-horses—Retainer, by Jerry—who had been stopped in his work the preceding year, in consequence of a damaged leg. On examination of the injury, however, Mr. Fryer paused, and thus addressed his lordship:—"If I fire this leg," said he, "I must fire it very deeply; and I candidly tell your lordship, I should be doubtful of his being again in any thing like his old form, as a race-horse, if I do;" and, much to his credit, after completing his annual inspection of the stud, he departed for Yorkshire, without using his firing-irons at all. Now, I heard not a word of the seton in this case. Would it not, then, very much tend to a favourable issue to this disputed point, as well as be a great public benefit, if some of your profession, whose practice lies among race horses, would give the result of their experience of the seton, as applied to them; particularizing the nature and extent of the injury which it may have cured or not cured? May I also hope, with the same view to utility, and in my regard for the welfare of horses, that Mr. Turner's promised work on the effect of cautery lesions will be followed by one on that of the seton, either by Professor Sewell himself, or by one fully competent to the task. I am quite certain that such works would be most eagerly sought after by the sporting part of the British public.

Mr. Cheetham (p. 153) is decided in his preference of the firing-iron over the cautery, although admitting to the latter its use in certain cases. He likewise corroborates, in part, Mr. Turner's assertion, that horses become sound *immediately* after having been deeply fired for certain diseases; but not satisfactorily so, because he doubts the immediate destruction of the *causa causæ*, by the mere agency of the fire, being more disposed to attribute the diversion of pain to the new seat of torture—the deep lesions. If the nerve be at once destroyed, no doubt the horse would remain at ease; otherwise rest, and the ordinary results of firing would, I think, be necessary to effect a permanent cure, where the injury has been severe. In fact, rest has much to do with all cures, but especially with the one in question. This *vis medicatrix naturæ* was observed by the father of medicine, and has been acknowledged by all candid and discerning practitioners*.

* The effect of time in the cure of disorders is thus beautifully illustrated by Dr. John Moore. "The *vis medicatrix naturæ*," says he, "is that inherent bias observable in the animal economy to restore health; for as the surface of a lake which clearly reflects the sky, and hills, and verdant scenes around its borders, when disturbed by the falling of a stone, immediately

I now come to a case—that of the Surrey huntsman's horse, related by Mr. Thomas Turner—which I read with mingled feelings of pleasure and pain. Pleasure, at seeing the triumph of science and art over great physical difficulties; pain at the necessary infliction of much torture on a good and noble animal;—and pleasure, again, at the humane interference of the gallant horseman and excellent sportsman who so feelingly interceded to spare the sufferings of a favourite horse. Nevertheless, although humanity should be the badge of every department under the guidance of man, and although, as Montaigne so elegantly says, "There is a certain general claim of kindness and benevolence which every creature has a right to from man," still it will not do for the surgeon, veterinary or human, to calculate too nicely the amount of suffering he may inflict in his efforts to effect a radical cure. "Increase our sensibilities," says another forcible writer, "and who could live? they are limited in mercy and justice." Increase them, say I, and where should we find a man to amputate a leg, or cut a fellow-being for the stone? And yet it may be difficult to determine how far we are justified in obtaining a few years' services of an animal at the expense of the pain and sufferance the horse in question must have been subject to: for it horrifies one to read a detail of the operation (nine months' of suffering calculated upon, reduced unexpectedly to seven; the state of the limb, compared to furrows in a ploughed field, dilated as suppuration advanced, and by no means pleasing to the eye), and still more to recollect that he was a second time exposed to it.

Notwithstanding the pain the recital of this case must give to the common reader, totally indifferent to the subject matter in dispute, it affords an indisputable, an incontrovertible proof of the curative power of deep cautery lesions, in cases of severe injury; and more than this, it gives rise to a question, the answer to which must go a great way towards deciding the relative value of these instruments of cure, or the *modi operandi* of them. Here were two cases of what are called "broken down legs," in nearly the literal sense of those words, for "the toe inclined upwards, and the tuft of hair (of the fetlock) almost touched the ground." The question, then, arises—*would the use of setons have cured either or both of these legs?* And why, may I ven-

endeavours to recover its scattered images and restore them to the same beauteous order in which they are wont to appear, in the like manner, when the natural course of the animal economy is interrupted and disturbed by disease, the powers of the constitution are continually endeavouring to restore its organs to the perfect use of their functions, and to recover its usual vigour and serenity."

ture to ask, should not this doubtful point be at once cleared up? Why should not one or two equally broken down horses be purchased at the joint expense of the advocates for the cautery and the seton, or, the new and old systems, as they may be termed, and the experiment at once made? Should it prove favourable to the seton—conceiving, as I do, that the pain and suffering produced by the use of it must be infinitely less than those arising from the ridge and furrowed leg, which that of Paddy may be denominated—it would be a triumph for the advocates of the seton and humanity at the same time. Demonstrative evidence is here scarcely satisfactory.

I beg to offer one more remark on this case. It appears Paddy soon afterwards failed on the hitherto sound leg. I conceive this to have been, in a great measure, the result of his having, for so many consecutive months—at all events, weeks—thrown an undue portion of his weight on that leg, to avoid pressure on the other. Would it not then be well, that a horse subjected to so long a period of suffering—taking for granted that such is the case—should be slung during some part of the day, so as to relieve his legs of a certain portion of his weight? Mr. Percivall's sling, a plate of which is given in his "Hippopathology*," would exactly answer the purpose.

Mr. Turner, senior, next appears in this very interesting debate, doing justice to the seton, and especially in cases of stifle-lameness, contused shoulders, as well as in those where the injury is not exactly within the reach of manual detection. The result of his own experiment on the trotter is most satisfactory. He, however, concludes with somewhat of a damper to the advocates of the seton. He not only thinks, that the contused shoulder of the trotter might have been equally well cured by the cautery, but looking at the "general routine of practice," awards a balance of 20 to 1 in favour of iron over steel!

Mr. Holmes says, "many horses have gone away sound from the College, after having been setoned." This cannot be doubted; still I should have liked to have known something of the generality as well as the peculiarity of their diseases; and whether there were amongst them any cases of injury to legs approaching to that of Paddy's. With respect to the blemishing, I conceive Mr. Holmes does not mean to assert that setoning leaves no mark. Such is certainly not the case in this country, whatever it may be in England. Still, the blemish from the iron is ten-fold greater, and although, as instanced by Mr. Turner, in

* A plate of this sling will appear in my forthcoming work in the French language, on the race-horse, for the use of the French and Belgic Jockey Clubs.

the case of Mr. Maberley's late stud, it is not prejudicial to the sale of horses that are known in the sporting world, it operates much against those that are not known; and I will give a recent instance:—Among the numerous visiters assembled last week at the chateau of Count Duval, to celebrate the fête of Saint Hubert (the patron of hunting) was a gentleman of the name of Bryan, residing at Brussels, and one of the leading sportsmen of the continent. He, a short time back, sent his chesnut gelding *Major*, to London, for sale, expecting a good price for him, the said Major being not only a good hunter, but the winner of several races over the Brussels course, as the French and Belgic calendar will shew. But mark the result. Being fired, and *not known in England,* he was bought in at Tattersall's for £24, and eventually sold for £22; and this in spite of his being what is called a clever-looking horse, only seven years old, and quite sound!

Mr. Mayer's reply, at the conclusion of this day's discussion between the members of the Medical Association, was looked for by me with much interest. I was in hopes this ornament to his profession would have thrown something more into the scale in which the merits of the seton are placed, even if he despaired of seeing its fellow kick the beam; but in this I was disappointed. Beyond the abatement of excessive inflammation, and diminution of lameness as its concomitant, he is afraid to pin his faith on the seton, leaving the death-blow to disease generally in the skilful application of the cautery, and where, from what I have yet been told, I *fear* it is likely to remain, at all events, for some years to come.

April 18*th.* Mr. Spooner continues the question of the relative value of the two operations, admitting the use of each in its place; but offers an assurance, in which I sincerely join him, that the seton might hitherto have been, in thousands of cases, resorted to, occasioning not only less suffering, but as having been better calculated than the actual cautery to perform a radical cure. To *legs,* however, it is evident he leaves the remedy, in bad cases, in the firing-iron; neither do I see how, where there has been laceration of the ligaments, the seton can do the business. This gentleman's remarks on *superficial* firing are well deserving the attention of the sportsman; for whosoever may have recourse to it will, six times in ten, discover that he only trifled with the disease, and has consequently lost time. The destruction, and then the new organization of the parts by deep firing may startle him, because, until he read the statements of Messrs. Spooner and Turner, he never dreamt that such things take place by such means; but here it is that the operator by fire finds his account in desperate injuries to

horses' legs. It is the counter-irritant carried to excess that does the business. As to the argument of the bandage produced by the lesions, I will not enter upon that again. I content myself with asserting, that ninety-nine hunting sportsmen in a hundred conceive that such is the result of the operation of firing, skilfully and effectually performed.

The concluding paragraph of Mr. Spooner, on this part of his subject, is as creditable to his candour as to his judgment: "The whole," says he, "resolves itself into a question of science and prudence;—science, as to the kind of operation that is required in certain cases, and of prudence in directly and unyieldingly opposing the opinions of others." "The art of setoning," he adds, "is in its infancy; like all others, it must stand the test of experience, before we can pronounce on its merits; but our judgment must not outrun our practice."

Mr. Cheetham's observations on the hock joint are beyond my reach; but I perfectly agree with him in the low estimation in which he holds blisters, when applied to severe injuries of horses' legs. I confess my own experience of them has been any thing but satisfactory; indeed, I have seen much injury produced by their use. I cannot, however, pass over Mr. C.'s judicious advice to young practitioners, to make themselves masters of the operation of *firing*. Admitting the seton to be of equal value, it will be many years before sportsmen will believe it to be so, and the high estimation in which a skilful operator in this department of the veterinary art, the use of the cautery, is held by them, can only be known and appreciated by persons who, like myself, have lived nearly half a century among them. But the reluctance to quit the beaten track is not confined to sportsmen and other owners of horses. The bulk of mankind, in which persons of all professions are included, think themselves dispensed from imitating and following great models, although a propensity to be carried away with the lowest of bad ones is every day seen.

Mr. Richmond vouches stoutly for the seton, and laments that his brethren of the profession had not, in this debate, advanced something more than they had done in favour of its curative effects. After alluding to the cures he had witnessed of diseases of the extremities by the seton, he concludes with giving it the preference in recent cases, and the cautery in chronic ones —an admission, by the by, that the latter is the most powerful agent of the two. Mr. Dawber seconds his approval of the new practice, and, when expressing his belief that its effects are permanent, was backed by the President by an assurance that such is the case—an assertion that should not be lost sight of.

[To be continued.]

THE APPLICATION OF NITRE IN CASES OF GANGRENE.

By Mr. King, *Stanmore.*

I am fully aware that practitioners often delude themselves as to the effect of certain measures, and, perhaps, I may have done so in the following cases: but the result was to me satisfactory, and not having heard of any one taking up a similar treatment, I send you their history.

The first patient was a stage-horse, which had a small and rather pointed chaise shaft forced into the back part of the thigh, about midway down, and in a horizontal direction toward the back of the stifle-joint. The wound was treated by the horse-keeper, *and said* to have discharged well, and gone on kindly for four or five days, when, the discharge ceasing, and the limb suddenly becoming enormously swollen, the horse was sent to me.

The thigh was enlarged to such a size that you would suppose it hardly possible for the skin to admit of farther distention. The discharge was trifling; sanious, with escape of air-bubbles from the wound, accompanied by the peculiar gangrenous scent, and, what I consider one of the most decisive characters of existing mortification, a particular hollow drum-like sound in some circumscribed spot, discovered by striking the surface.

I considered any attempt at cure almost useless; but having, just at the time, noticed the effect of nitre on some grumous blood, I went to work, and made a perpendicular incision, at least eight inches in length, and as deep as I dared go, so as to keep clear of the artery. The interior of the wound presented a livid, mortifying mass; and as I thought I could do no harm, I made on each side of the perpendicular wound two or three deep cross cuts. The whole of the cavity so made I filled with soft pledgets of tow, saturated with a rather warm solution of nitre (perhaps three ounces to a pint of water), and confined with sutures.

On the second day, the symptoms being no worse, the application was renewed. On the third day, I followed up the treatment. On the fourth day, the fœtor was much changed, and a perceptible line of demarcation was beginning to be apparent, which became every day more and more distinct, until about the tenth day, when a considerable slough was thrown off. The wound soon afterwards healed, leaving an extensive depression in the thigh from the loss of substance: it was, however, attended

with no permanent inconvenience, and the animal was again put to work.

Very lately a similar case, except that in this instance the wound, a very deep one, was caused by some sharp-pointed and small instrument, fell under my son's management. He thought it a hopeless business; but having heard my account of the former one, he adopted the same treatment. This case, with a very trifling difference during its progress, went on to the same satisfactory (local) result.

I occasionally saw this case, and at first really thought nothing could have arrested the mischief: however, I am sorry to say, that tetanus came on about the twelfth day, which wound up the concern. I do not think it would be fair to attribute the tetanus to the incisions, as the part cut into had absolutely lost its vitality. I trace it to the original puncture.

A CASE OF PUERPERAL FEVER—THE COW DESTROYED BY NITRE.

[A friend requests our opinion of the following case, and his treatment of it. The Editor is a prisoner a-bed. What say some of our country practitioners about it?—Ed.]

On January 10th, 1838, at 2 p.m. I was requested to see a cow, about eight years old and very high in condition, that had calved in the middle of the previous night, out of doors, and in the snow. The messenger told me that the cow was trembling in her hind quarters, and staggering a great deal in her walk, and would eat nothing. From this account I was aware of what was about to ensue; and having another patient that demanded my immediate attention, two miles distant in an opposite direction, I sent the following drench by the messenger, and told him that I would come immediately on my return:—Magnes. sulphat. ℔j, sem. carui et pulv. zingib. āā. ʒij, to be given in warm gruel, and poured gently down the throat.

Being unavoidably detained longer than I expected, I did not see my patient until about 5 p.m., when I found the cow down, heaving considerably at the flanks, grating her teeth, the muzzle dry and pointing to the flanks, the cheeks wet with tears, and without power to raise the hind quarters from the ground. The pulse was imperceptible at the submaxillary artery, and with difficulty felt at the side, but sufficiently plain to tell me there was a burning fire within. The pulse was small, quick, hard, wiry, and

about 75 in a minute. They had bled her previous to my arrival; but notwithstanding that, I considered the abstraction of more blood necessary, and consequently bled till the heart's first falter. I then placed a fresh warm sheep-skin over the loins, ordered the udder to be well drawn, and the cow well bedded down. Prior to my leaving, the servant came into the house, and informed us that the cow was standing, and that she had rubbed out the pin from her neck. I immediately repaired to the cow-house, and fastened her neck again. The heaving at the flanks had considerably subsided, and the cow once more lay down. The medicine had not operated; therefore I requested that a servant might be sent with me for some more, and promised that I would attend in the morning. I sent the following powders, one of them to be given every five or six hours, in warm gruel, until the bowels were opened :—Magnes. sulphat. ℔ss., sem. carui et pulv. zingib. āā. ʒij, croton farinæ ʒss.

11*th*.—On my arrival, I found her considerably worse. I inquired if they had given the medicine, and was answered in the negative; but they had given her, according to the recipe of some old farmer who was kind enough to interfere, the following drink, which was what he always gave to his own cows in such cases: viz. ol. ricini a pint, and Castile soap and nitre of each three ounces. I wished that he and his prescription had been fifty miles distant at the time, for the nitre had reproduced the inflammation in a tenfold degree. The cow was stretched at full length, sweating and heaving tremendously at the flanks; a flood of tears trickling over her cheeks, the sight of both eyes was nearly gone, and the secretion of milk almost suspended. I told the owner that death was near at hand; and so it turned out: she died about 1 P.M.

Post-mortem Appearances five Hours after Death.—The vessels of the brain were slightly injected; the heart very pale; the lungs turgid with blood, and the right lobe was nearly black. The contents of the maniplus were nearly dry, and very hard; the omentum inflamed; the small intestines inflamed in stripes; the liver pale; the kidneys considerably bleached, with patches of a bright crimson colour in various parts; the bladder partially full, and highly inflamed, as well as the ureters; and the uterus inflamed in patches. The spinal cord I was prevented from examining, on account of business which demanded my attention in another quarter. Should you deem this case, Mr. Editor, worthy a page in THE VETERINARIAN, I should feel obliged by your inserting it, as well as by your opinion of the farmer's dose; and if you attribute the inflammation in the ureters and bladder, as well as the inflamed and bleached appearance of the kidneys, to the extravagant quantity of nitre and soap administered.

ON THE EXPANSION OF THE HORSE'S FOOT.

Mr. Charles Clark in Reply to Mr. Morgan.

Sir,—My attention has been drawn to a letter that recently appeared in your pages, from the pen of a veterinary surgeon, who, as it were in despair, has had the boldness, I may say the effrontery, to deny the expansion of the horse's foot.

This assertion, and the "experiments," as they are called, by which he attempts to substantiate it, would have deserved no reply from me, had it not been followed by another letter (p. 685) of very high pretensions to superior knowledge and success in practice; hence, lest any of your readers should suppose that his arguments are unanswerable, I shall offer a few observations respecting them.

In order to overthrow or set aside the clear proofs of its expansive powers, which anatomy and every-day experience afford to all who have investigated the subject, Mr. Caleb Morgan thinks it enough to report the results of certain equivocal trials, made with the calipers by himself and a mathematical friend, on the feet of some young horses. Nubia had stated, in the *Sporting Magazine*, that the foot would expand considerably under the weight of the horse, when quietly standing with one leg raised from the ground. Mr. Morgan states, that this did not take place in the feet that he tried, and, therefore, denies the expansive quality *in toto*. Now, without refusing some degree of credit to both of those statements, we must remember, that it is not every one who can make an experiment properly; and also, that the result depends very much on the manner in which it is done; and that nothing is easier than to make an experiment not succeed when we wish a different result.

That this organ is naturally elastic there can be no doubt, since we see, in its component parts, machinery expressly for this purpose, the frog being obviously given to fulfil this office; and in an experiment made with care, by Mr. Bracy Clark himself, in the presence of Lord Morton, this expansion was most apparent. This is an experiment (requiring some degree of skill, and, if not well performed, very inconclusive) which would succeed when tried on full-grown and elastic feet: in the cart-horse it might possibly fail, from the thickness and rigidity of the horn; and also in the young colt, from the imperfect development of the elastic parts; and, most curiously, Mr. Morgan has selected this sort of foot for the purpose of his experiment: had he known

how to conduct it properly, and taken a full-grown foot, he would have found a different result.

With regard to the general question, I know not whether to attribute it to the dulness of his perceptions, or to the "mist" which he says "envelopes the subject," that he "never could discover this much-talked-of expansion, or opening and collapsing of the foot of the horse." I beg leave to ask this gentleman, if he has never seen a horse come up from grass, without shoes, with feet half or three-quarters of an inch wider than they were before? Has he never seen the heels of a common shoe rubbed bright, by the ineffectual attempts of the foot to expand in spite of the nails? And, above all, has he never applied his thumb and finger to the heels of a well-worn expansion shoe, and seen the shoe and foot collapsing and expanding under the operation? If he has not done this, let him do it the first opportunity, and it will lead to *a discovery* which, it seems, he could not make before.

The above are evidences of the expansive nature of the foot, that have come under the observation of most men, and are easily comprehended by even the meanest groom's capacity. But there are others, drawn from a consideration of its anatomical structure, which I had almost forgotten to adduce; for his assertions are such as to make us forget that he is a veterinary practitioner who has actually dissected the foot, and in so doing could hardly have avoided perceiving, when it had been once pointed out to him, the elastic principle that pervades it.

For example, could he not discover that it was cleft posteriorly beyond its centre, and was filled up by a highly elastic organ, rendered still more so by a series of arches forming somewhat the figure of an inverted W (ΛΛ), all having the obvious office of expansion, and power of dilatation? Can he tell us for what purpose the frog was given, being an elastic substance, nearly as much so as Indian rubber, if it was not to expand under the weight? In fact, the foot is fraught with proof sufficient of the existence and necessity of this indispensable principle in all feet; but as it is impossible, especially for Mr. Caleb Morgan, and those who are by inclination blind, to see this expansion when the animal is trotting or galloping, and equally impossible to calculate the increased force with which by such momentum it meets the ground, which must be many times that of the mere weight; so we are forced to draw such conclusions from the structure of the part and the apparent intentions of nature. And how much greater is it then than while standing in a state of perfect rest, when the weight alone, opposed as it is by the friction that takes place between level surfaces (that is between the

flat hoof and the flat stone), which might not in all cases be sufficient to produce a very sensible effect, and which friction should be guarded against in making the experiment.

But to return.—We must not forget to consider the spirit, whether partial or impartial, in which an experiment is performed. Now, Mr. Morgan reminds us of those reasoners who make all their facts bend to a predetermined opinion; for he tells us "These experiments, &c. were originally intended as an answer to some letters in the *Sporting Magazine.*"

Lancet, 1828-9. vol i, p. 824.

Mr. Morgan in Reply to Mr. C. Clark.

Sir,—My communication, inserted in your valuable journal, No. 287-9, of the result of some experiments relating to the supposed expanding and collapsing power of horses' feet, which I tried, in consequence of a statement in the *Sporting Magazine*, has excited a most virulent and personal attack against me, from the pen of a Mr. Charles Clark, who styles himself a veterinary surgeon, though his name does not appear in the annual list published by the Royal Veterinary College.

The facts which I stated he has not attempted to invalidate, except by gratuitous assertions, by rude vituperation, and oblique insinuations, unfavourable to my professional character, and the motives of my communication. I can only account for this acrimonious violence, by the contempt which I unluckily evinced for theorists and book-makers, whose ignorance and inexperience have done more to retard the progress of the veterinary art than all the prejudices of smiths and grooms put together: but "let the gall'd jade wince." I did not seek this controversy, nor shall I persevere in it further than a just regard to my professional character and veracity require. I am free to acknowledge my literary deficiencies, and do not pretend to compete with hacknied writers, whose professional avocations, fortunately, leave them so much leisure for composition. As for me, I am otherwise employed, and have no occasion to seek any surreptitious stage to exhibit upon, or write myself into practice. I will, however, venture to tell these gentlemen, that invective is neither an answer to fact nor a support to baseless theory.

The experiments which I detailed to you and your readers were performed with a view to ascertain whether, according to the statement of "Nubia," in the *Sporting Magazine*, a horse's foot really collapsed and expanded the one-eighth of an inch. The same writer says, that they were performed on a mare standing quietly in her stall. But now, it seems, they can only be

fairly tried on a horse going rapidly along the road! This is truly an ingenious subterfuge, and a happy method of throwing a stumbling-block in the way of a simple and easy experiment. Your correspondent, indeed, seems to think that none but himself and his connexions have any right to try such experiments. Yet I have the "effrontery" to maintain, that the transcendent abilities of Mr. Bracy Clark, aided by my lord Morton's acumen, are not required for the accurate measurement of a horse's foot with calipers on or off the ground, with weight on his back or without it, in order to ascertain if any difference of width takes place under these different circumstances. Fortunately, I have at the moment a mare under my hands, *got by Smolensko*, whose fore feet are as fully developed as they can be, and have never felt the "iron prison and wedges." Here was a fair opportunity of ascertaining the effects of the momentum of speedy action. I accordingly availed myself of it, and repeatedly measured both the foot when held up in the hand and "collapsed," and the impression of it made on the soft ground when the animal was going at the top of her speed, and not the slightest difference was perceptible in that part of the foot which would have come in contact with the shoe, whatever might have been the case with the side cartilages, whose action I never meant to deny. It is useless to talk of parts for the performance of any function, the exercise of which cannot be proved by well-authenticated experiment. We have, indeed, this gentleman's gratuitous assertion, that the much-talked-of quality in question was apparent to my lord Morton and Mr. Bracy Clark; but we are totally left in the dark as to the way in which its existence was demonstrated. To this I can only oppose the testimony of many, in whose presence I have measured the feet of several horses, and who, without disparagement to the great mechanical skill of the eminent personages just mentioned, I would yet venture to rank much higher on the score of practical attainments. Mr. Clark would insinuate, that I had measured the feet of cart-horses and colts only. It is in vain to state facts to those whose preconceived theories and interested views they must subvert and disappoint. But to you, Sir, and every candid reader, I declare that the measurement of such feet was only adduced as a collateral support to what had been already clearly established on as perfect and full-grown feet as Nature ever formed.

I would now most willingly drop the subject, or "hold hard!" had not certain questions been addressed to me, which might mislead superficial observers were I to leave them unanswered. Before I proceed to them, it is as well to remark, that much confusion often arises from errors in nomenclature. To this source

may be traced much of the quackery and humbug with which the world has been mystified on this subject, as well as many others. I would beg to submit, that, in the present case, the terms "expansion and contraction" might be much better exchanged for growth and absorption; for these last are the processes which actually take place in the feet of horses.

Now to the queries: "Did he ever see a horse come up from grass with feet one-half or three-quarters of an inch wider than before?" I answer, Yes, many; but not from any expansion of old horn, but the growth of new, precisely as the human nail grows!—"Did he ever see the heels of a shoe rubbed bright?" I have long known that shoes, especially when they spring at the heels, or become somewhat detached from the foot, will become bright immediately under, and where they come in contact with the crust, from its downward pressure; but not one atom beyond it, which would be the case did this contractile and expansive power really exist. As to the "stuff" about the nails,—they are always placed sufficiently in the fore part of the foot to admit of this contraction and dilatation, did they exist any where but in the "perceptions and conclusions of theorists."—I am next asked, "Did he never see a foot collapsing and expanding with an expansion shoe on?" and, of course, fixed on by eight or nine nails immediately round, and on each side of the rivet*? I answer, No! nor did any other man.

The forcible compression of the heels together upon the frog, by which a portion of the sensible frog and parts within the foot are displaced, but which resume their original form when the pressure is removed, no more proves a naturally expansive and contractile power in those parts, than pressing the human knuckles into a small space and then releasing them proves that they are constantly dilating and collapsing. This resumption of the original form of the foot, which Mr. Clark considers so decidedly conclusive in favour of his theory, but which, as I have proved, lends it no support whatever, may be as easily ascertained with the shoe I have described in No. 289, as with this newly-christened "expansion" shoe, which, after all, is only the old shoe for all feet of Gueriniere†.

* It was very pertinently observed to me, the other day, by a friend who happened to see one of these newly-called expansion shoes, that placing a rivet at the toe, and then driving the nails round it, was something like putting a bolt into a lock, and then soldering it up!

† École de Cavalérie, Paris, 1733, par M. de la Gueriniere, Ecuyer du Roy, Chap. vii, p. 46:—"Il y a quatre sortes de fer en usage savoir le fer ordinaire, le fer à pantoufle le fer à demi pantoufle, et le fer à lunette. Il y en a encore un cinquième, qu'on appelle fer à tous pieds, qui se plie au milieu de la pince, se largit et se serre selon la forme du pied. On l'en sert

But, though I utterly deny this doctrine of "expansion"—though I maintain that the foot is naturally always of the same size, on or off the ground, in action or at rest—let me not be supposed to consider it as a block of granite. I yield to no man in admiration of its wonderful structure and economy.

I am next asked, "What office I assign to the frog?" The horse's hoof, so far from being "cleft" or "divided," is a horny box, or covering, to the sensible parts of which the foot is attached: of these the frog, formed of highly-elastic materials, is a most important part when its functions, on meeting the ground, are not interfered with. One of these is to break the concussion the foot would otherwise sustain, and also, by its upward and lateral action against the side cartilages, where the expansion really takes place, to keep the horn as it is secreted, in the form which was intended by nature. Such is the office of the frog.

His *gratuitous* assertions I hope I have answered to the satisfaction of all impartial judges; and I beg to assure him, in conclusion, that all he may hereafter choose *to assert* shall be met on my part with that silence which his vanity may interpret in one way, and impartial judges, perhaps, in another.

HÆMATURIA (ACUTE RED-WATER) IN CATTLE.

By M. Drouard, *Monbard.*

The frequency of this malady in the last spring having enabled me to observe several phenomena respecting it, which no practitioner has yet described, I am tempted to present to you, not a perfect *monographie* of this disease but, an account of certain symptoms and lesions, and which go far to indicate the causes of it, at least in our country.

It is rare that we are called in at the commencement of this disease; but when we do first see our patient, the following lesions usually present themselves. The pulse is slightly irregular—the urine high-coloured or assuming a reddish tint—the animal preserving for a short time its spirits and appetite—the muzzle is abundantly moistened with its natural dew: but presently the breathing becomes accelerated—the pulse is small and wiry—the urine takes on a bloody colour—the coat stares—the muzzle becomes dry—the secretion of milk, if the patient is a cow,

en voyage quand un chéval a perdu son fer."—The plates representing this, and other shoes, are in a very good state of preservation. A good copy may be seen in the library of the British Museum. The Supplement, published in 1758, to the Duke of Newcastle's splendid work on hosemanship, also notices this make-shift shoe, or shoe for all feet.

diminishes, as does also the appetite, and there are occasional shivering fits, with alternations of cold and heat at the horns and the ears. The appetite by degrees entirely ceases—the secretion of milk is suppressed, or a very few drops only are yielded, and they are frequently of the colour of blood—the urine becomes of a more decidedly blood colour—it darkens beyond that, it is black—the pulse is small and frequent, as many as 80 in the minute—the beatings of the heart, however, the same in number, can frequently be heard at a considerable distance—the urine is voided frequently, and without pain—the loins will not bear pressure—the patient becomes exceedingly weak—the skin and the mucous membranes are deathy pale—the animal moans lowly and frequently—it at length lies down without the power of rising—the eyes are buried in their sockets, and the poor creature rapidly wastes away and dies.

This disease runs its course with much rapidity, dating from the time that the urine begins to assume a bloody tint. In some cases the patients can scarcely be said to be ill; they seem to suffer no inconvenience; and if we did not see the colour of their urine, we should not suspect that any thing was the matter with them. With others, the disease takes from three to six days, rarely more, before it arrives at its greatest degree of intensity: in these cases it is always a serious affair, and utter loss of appetite - violent palpitations of the heart—general debility, and excessive paleness of the skin and mucous membranes, are observed.

The malady continues from two to four or six days: in a great majority of cases the animal is abundantly better or is dead before the expiration of this period.

I have only seen one case in which hæmaturia was complicated with inflammation of the brain: here was stupor and somnolence, rapidly succeeded by the utmost violence. The animal died about the tenth day.

If we may judge of the intensity of the disease by the colour of the urine, we may say that, if we see it in one or two days change from a light red tint to the deepest hue, we may also see it, in favourable cases, as rapidly recover its natural transparency. It is not so with regard to the general strength of the animal, which it takes a considerable length of time to recruit. If cattle are moved from a low to a mountainous country, and there contract the disease, every thing is changed with regard to them—their food, their work, the soil, &c. They become presently fatigued, they stagger as they walk, and very soon are totally unable to work; but, by degrees their strength returns, and they perfectly recover their former health.

There can be no doubt that this malady, whatever it be, has its principal determination to the kidneys: the mucous membranes that line their cavities become the seat of a sanguineous exhalation or a passive hæmorrhage; the blood, very fluid under these circumstances, does not coagulate; it passes through the ureters into the bladder, mingles with the urine, and stains it of its own colour. It is usually evacuated without any apparent pain, but those evacuations are rendered somewhat more frequent by the additional specific gravity of the blood.

If this exhalation is continued, the blood is deprived of its fibrinous and colouring matter, and the urine becomes black.

If a vein is opened, the blood appears serous and discoloured, and the hand introduced into the vessel which contains it is scarcely stained. If the hæmorrhage is not subdued, the kidneys lose all their power, and the bleeding is purely passive: the beatings of the heart become exceedingly strong, while the arterial pulsations are scarcely felt: the animal, at length, is no longer able to support himself, and he dies, in a manner, bloodless.

In the ruminant, hæmaturia does not take the same course, nor has it the same termination, as in the solipede. The difference in the organization of these animals, their different idiosyncracies, and food, and work, are so many sufficient causes of this. I have never seen it, in cattle, terminate in gangrene, or suppuration, or ulceration of the kidneys or the bladder, although we do often find calculi, both renal and vesical, and particularly those of a golden colour. Possibly hæmaturia is occasionally produced by the existence and rapid development of these concretions.

Some animals, as I have already stated, appear to suffer little from this disease—they are scarcely at all incommoded by it. In many cows the secretion of milk does not appear to be in the least degree diminished; but the animals preserve their ordinary spirits and appetite. The prognosis will, of course, be favourable in such cases. The hæmorrhage will seldom last in them more than one or two days: should it, however, continue to the third or fourth day, there is nothing to apprehend, while the animal retains his ordinary appetite. The bloody tint of the urine oftenest disappears about that time. If, on the contrary, the hæmaturia should continue, and the pulse should be small, and beat 70 or 80 times in a minute, the pulsations of the heart being at the same time violent; if there is complete loss of appetite, excessive debility, paleness and discolouration of the skin and mucous membranes, the animal will generally be lost, although, by more than usually skilful treatment, one may now and then be saved.

I used to think that, on opening the dead body, I should find considerable lesions of the tissue of the heart, the kidneys, and the organs designed for the excretion of urine. I thought that I should find some traces of inflammation in the fourth stomach and the intestines, especially in a cow that, in the course of her illness, exhibited evident symptoms of cerebral disease. In this case I have found the cellular tissue surrounding the bladder infiltrated with a mingled green and bloody serosity. The fourth stomach, in a great number of animals that I have opened, did not present the least redness. Occasionally in the third stomach there is some exceedingly hard and dry food—the epithelium, which lines the leaves of the maniplus, as is the case in many diseases, is torn from the coat beneath in the attempt to separate them. All the tissues, and particularly the muscular tissue, are white and bloodless. The kidneys are pale : occasionally there is a little blood contained in their pelvis. The bladder is generally empty, or, now and then, contains a small quantity of bloody urine. The mucous membrane of the bladder, although otherwise sound, sometimes participates in the general discolouration. The tissue of the heart is soft; its cavities contain small clots of blood, and the larger vessels are almost empty.

Young animals—well-fed oxen—bulls that are too early employed in the work of reproduction—animals that pass from the valley to the mountain, and those that, under the influence of change of regimen, speedily acquire condition, are most disposed to this disease.

The occasional causes are the sudden access of sultry weather —pasturage in abundant after-math—the eating down of green oats, or barley, colewort, or charlock, or wild mustard, or ground-ivy, or, finally, feeding on the young shoots of elm, red cornel-berry, hawthorn, maple, privet, hazel-nut tree, the oak, and resinous trees.

Some have said that these animals sometimes swallow cantharides by pasturing along the privet-hedges, and drinking in marshy places shaded by the ash. We have many cantharides in our country, but I never heard of any harm produced by them. The smell which they exhale, and the excrement which covers the grass beneath the trees which they inhabit, are sufficient to prevent animals from pasturing there; besides which, they are never found under the tree. As to their poisoning the water, I have placed them under water for more than twenty minutes at a time, and they were not injured.

Colchicum, ranunculi, the marsh marigold, the mercurialis, plants more or less injurious, have also been accused of producing hæmaturia ; nevertheless, we have seen, and we every day see,

cows eat the mercurialis and divers ranunculi without being in the slightest degree injured.

It has also been said, that hæmaturia may be produced by the resin of the young buds of resinous trees, or the astringent matter of oak leaves. Some chemical researches, made by M. Lecler, of Montbar, have enabled me to state, that the spring buds of the hawthorn, maple, and ground-ivy, contain a very great quantity of gallic acid, while those of the oak contain very little; that the buds of the elm, the oak, and the hawthorn contain a great portion of tannin, while those of the cornel have but little, and those of the maple none at all—that those of the cornel and the maple contain only a small quantity of resin and that the fluid in which all young buds are macerated reddens turnsol in a very decided manner.

These analyses demonstrate, that the principles to which we have been usually accustomed to attribute hæmaturia are in too small quantity to produce the effects we have observed; and that we must rather search for the cause of it in the usage of green food in the spring, and of ordinary aliment, too aqueous, and in which their proper active principles are not yet sufficiently developed. The animals eating a great quantity of these at that season, the organs of digestion are slightly excited; an excitement which is soon calmed down by the continued usage of these over-aqueous aliments, and which gradually produce a general debility or loss of power. The consequences of this are, discolouration of the blood, and unnatural state of fluidity in it, and its consequent evacuation by the mucous surface most ready to be acted upon by it, and which is the mucous surface of the kidneys.

In 1834, vegetation proceeded very rapidly. I had a great many patients labouring under this disease, and almost all the early ones died. In 1836 and 1837, on the contrary, the vegetation was slow and interrupted, and hæmaturia did not appear, at least in the canton of Montbard.

Treatment.—We have, hitherto, somewhat too exclusively employed the antiphlogistic method in the various stages of this disease. In following, with attention to the successive development of all the symptoms which characterize it, it must be acknowledged that, if the sanguineous turgescence is principally perceived in the region of the kidneys, their state of engorgement will not be slow in being replaced by an opposite one, accompanied by all the principal indications of anemia or bloodlessness. It is on this account that we need not wonder to see charlatans counting on a certain number of cures by means of the stimulants and the tonics, which are indiscriminately employed by them in every

stage of the malady. Every impostor has his peculiar recipe; and, unhappily for agriculture and for the veterinary surgeon, the number of these impostors is far too great in our country.

Animals bred in the valley, and who pass from thence to the woody pastures which cover our mountains, all suffer from this change of food. They should be left in the woods but a very little time, and should occasionally return to the stable, their herdsmen keeping the strictest surveillance over them; for I have never known the same beast have this disease a second time.

If we are called in at the commencement of the disease, one light bleeding may sometimes be prescribed, depending on the degree of inflammation that is observed. But in general it will be prudent to be very cautious in the employment of the lancet. Emollient ptisans, and injections of the same kind, should also be employed with much caution: it should be the same with the vapour bath, and emollient applications to the loins. In fact, we cannot employ these means to any good purpose more than a day or two; and if the hæmaturia continues, we should have recourse to a decoction of sorrel in milk, and the animal should also be made to take some pounds of rice and barley-water. If, on the third or the fourth day, the colour of the urine is as deep as at first, and the pulse has become small, and the beating of the heart more powerful, we may, with less danger than at the commencement, employ tonic astringents, commencing always with the least active. Thus we may make the animal take cold ptisans of willow, oak, or horse-chestnut tree bark, with which some ferruginous salt has been mixed. We may likewise continue the decoctions of sorrel and milk, and sharpen the tonic injections with some drops of vinegar.

Does the pulse, exceedingly weak, form a strange contrast with the strong and rapid beatings of the heart? we must hasten to employ analeptics, as pure milk, bouillies, soups of well-crushed potatoes, which the patients must be made to swallow; also some meat broth, and some ounces of powdered gentian infused in wine. Such are the means which I daily employ; and if in our country the loss amounts to one animal out of four, it is because the veterinary surgeon is not called in until the charlatan has wasted all his resources, and the poor beast is in a desperate state.

Récueil, Oct. 1837.

HÆMATURIA.

By Professor Vatel, *formerly Professor at the Veterinary School at Alfort.*

The evacuation, by the urinary passages, of blood, more or less pure—more or less coloured—liquid or coagulated, and proceeding from the kidneys, the ureters, or the bladder, is often observed in the horse, the ox, the sheep, and the dog.

Mechanical lesions of the kidneys, the ureters, the bladder, or the urethra—the presence of calculi, or the effort to carry or to draw heavy weights, may produce hæmaturia; but in these cases there is almost always rupture of some of the vessels. There is also sanguineous exhalation from the surface of some irritated membrane, and caused by abuse of diuretics or purgatives, or certain acrid food, as *ranunculi*, especially the *sceleratus*—the young buds of the *oak*, the leaves and stalks of the *colchicum*, *euphorbium*, &c.

The horse affected with hæmaturia often exhibits symptoms of cystisis.

In the ox and in the sheep this hæmorrhage is not often accompanied either by fever or colicky pains. The bloody evacuation is only dangerous when it is too considerable, or too long continued. It ordinarily disappears with the causes which produced it—sometimes, however, it continues, and may destroy the patient.

Quietness, restricted diet, emollient and acidulated injections, are the means of treating hæmaturia, from whatever cause it arose. Bleeding may be had recourse to when the inflammation is considerable. Camphor has been much lauded for its effect in vesical irritation, and especially that produced by cantharides. Liquid ammonia has much power when acrid deleterious substances have been eaten. When the evacuation of blood is considerable, cold drinks should be employed, and cold enemas, and cold applications to the lumbar region.

Elémens de Pathol. Vét. tom. i, 242.

[The Essay of M. Drouard will be read with some interest, in connexion with the subject debated on in the Association. There are a few valuable remarks in it; but it will not be satisfactory to the English reader. In plain and sober truth, how unequal are we to the discussion of these subjects, even at almost the close of the first half century of our existence as a recognized portion of the medical profession. Should these things be so?

Professor Vatel's remarks are worth reading, if only for the summary manner in which he disposes of his subject. The above few paragraphs contain the whole that he has to say about the malady.—Y.]

REPORTS

MADE TO THE ROYAL ACADEMY OF MEDICINE AT PARIS, BY MM. BOULEY, JUN., AND DUPUY, ON TWO MEMOIRS PRESENTED TO THAT ACADEMY BY PROFESSOR DE NANZIO, DIRECTOR OF THE ROYAL VETERINARY SCHOOL AT NAPLES.

[Professor de Nanzio was commissioned by the Neapolitan government, in the winter of 1836-7, to visit the principal veterinary schools in Europe, and to make purchases of horses in England for the stud of the king of Naples. During his sojourn in Paris, he presented to the Royal Academy of Medicine in that city a Memoir on the Cure of Hip-lameness, and another on that of Laminitis in the Horse. After a short discussion they were referred to a sub-committee, consisting of MM. Dupuy and Bouley, jun.

On M. Nanzio's arrival in England he attended one of the meetings of "The Veterinary Medical Association," and laid on the table of the Association copies of the same memoirs. Copies of them, and of the discussion that ensued, may be found at pp. 64 and 68 of "The Abstract of the Proceedings of the Association." During the residence of M. de Nanzio at Paris, a friendship, honourable to both parties, sprung up between him and M. U. Leblanc, who advocated the cause of the Neapolitan Professor in an Essay, a translation of which was given in THE VETERINARIAN of 1837, p. 402. The Report of MM. Dupuy and Bouley, jun. being now added, the reader will be in full possession of both subjects.—Y.]

M. Bouley is the reporter.

Gentlemen,—IN your sitting of the 26th of October, 1836, you have charged M. Dupuy and me to report to you on two memoirs that have been addressed to you by M. de Nanzio, Director of the Royal Veterinary School at Naples, the one entitled "A new Method of curing certain Lamenesses of the Horse," and the other, "A new Method of curing Laminitis in the Horse." In the name of that committee I now beg to report its opinion of the treatment recommended by M. de Nanzio:—

Memoir I.

This first memoir, in which the author recommends a perfectly new mode of treatment of certain lamenesses of the horse, hitherto deemed incurable, appeared to deserve every attention that we could bestow on it. We also thought that, in order to arrive at a fair and just conclusion, it was indispensable that we should procure certain horses labouring under this species of lameness, and put his plan of treatment to the test. This, however, compelled us to defer the presentation of our report during some months. We hope that you will appreciate our motive, and pardon the delay*.

Horses that are employed in quick and hard work, in large towns, often become seriously lame, and that lameness proves to be incurable. The diagnosis in these cases is generally sufficiently easy, when the cause of the lameness can be detected: but this cannot always be done; and in a great number of cases there is much difficulty in determining both the seat and the nature of the lameness, and, consequently, the treatment which must be employed in order to accomplish a cure. In these embarrassing circumstances, and which, unfortunately, so frequently occur, the veterinary surgeon first assures himself of the state of the foot, and if he finds no heat or tenderness about it, if the inferior and middle portions of the limb offer no shrinking point, —as there can be no effect without its adequate cause—he is led, and with much appearance of reason, to conclude that the seat of the lameness is in the upper portion of the ailing limb. When, however, he has arrived at that conclusion, he has yet to find out what is the nature of the disease, and whether it is the result of a violent sprain, or the consequence of rheumatic affection—whether it has its seat in the ligamentous apparatus, or in the muscles which surround and strengthen the articulations. Deprived of many indications of disease which the human patient would present—often led into error by those who attend to the animals, and whose interest it may seem to be to conceal the accidents that have occurred, it is easy to conceive how often the veterinary surgeon may be embarrassed or misled. Guided only by insufficient and delusive symptoms, he combats the disease by repose, by local bleedings, by emollients, and by discutients. If the lameness continues, and there is yet no tender or inflamed spot to which he can satisfactorily trace the

* Notwithstanding this delay, the reports were ready in the month of March; but M. Bouley was not called upon to read them until the 7th of November.

evil, he applies to the supposed ailing limb his vesicatory or adhesive charges—after that he tries the seton, and he concludes by the application of the cautery. Such is the long series of therapeutic agents ordinarily employed in these cases of lameness. One of them, or the united agency of two or three, often succeeds, and the animal becomes sound; but, too often, the lameness resists all means and appliances, and is then deemed to be incurable.

Struck by the insufficiency of the common treatment, and the frequency of these kinds of lameness on the smooth pavement of Naples, M. de Nanzio has adopted, and used with success, a mode of treatment which he considers to be new, and the frequent employment of which he zealously advocates. This, in lamenesses of the hind limbs, consists in making an incision through the skin which covers the hip-joint, about four inches in length, and cauterizing the cellular tissue and the subjacent muscles. In order more conveniently to perform this operation, and to prevent *the wounding of the trochanter,* he advises that the surgeon should make himself perfectly assured of the joint, by moving the limb first a little forward and then a little backward, taking care to place the hand below and in front of the trochanter. The precise point at which the operation shall be performed having been determined on, and the animal secured, an incision is made in the direction already indicated—the skin is then separated from the cellular tissue beneath, and its edges covered with pieces of linen dipped in cold water. Being thus covered, they are held apart by two tenacula, while the operator, with a round-pointed cautery-iron brought to a light red heat, burns through the cellular and muscular substance in three or four points, between the exposed surface and the articulation.

M. de Nanzio says nothing precisely as to the length of the pointed end of the cautery, but recommends the operator, while he burns deep enough, to be assured that he does not open the joint, an accident which, he says, has happened to the unskilful operator. The cauterization being over, the tenacula and the linen which covered the edges of the skin are withdrawn, and the wound is dressed either with marsh-mallow ointment or dry tow. The animal is then returned to the stable, and his head secured, that he may not be able to get at the wound. The wound, which only requires to be kept clean, speedily closes, and, at the expiration of fifteen or twenty days the horse, according to our author, is perfectly healed. M. de Nanzio has recourse to the same operation in cases of lameness of the shoulder-joint, and also in lamenesses below that joint, and, generally, with the same good effect.

In the course of his essay the author offers a remark which deserves consideration. He says that, out of one hundred lame horses, eighty, at least, are lame on the left side, whence he concludes that the limbs on this side are weaker than those on the right side. We will not deny the fact which M. de Nanzio states, but we will content ourselves with saying, that we have never made a similar observation at Paris, where lameness, both before and behind, is also very frequent. As to the explanation which M. de Nanzio gives of this supposed fact, we doubt the sufficiency of it. So far as our experience has gone, the left and the right feet of the horse are equally lasting, and there is nothing in their original organization which could cause one of them to be weaker than the other. Perhaps it would have been better if he had simply stated the fact without attempting to explain the reason of it.

We do not think that the wounding of the trochanter is so much to be dreaded as M. de Nanzio imagines; nor do we believe that it is possible to reach the hip-joint by this mode of cauterization. The joint is very deeply seated, and is so much sheltered by the trochanter in the horse, that it seems to be impossible that such an accident should occur. The author recommends that the incision should be made below and in front of the trochanter. If this advice is followed, the articulation will necessarily be behind and above, and cannot be injured. In both cases the apprehension of M. de Nanzio appear to us to be unfounded.

Far be it from our intention to contest with M. de Nanzio the honour of the discovery of this peculiar mode of operation; but a sense of duty compels us to remind you, that the idea of cutting through the skin and cauterizing the subcutaneous cellular tissue belongs to the illustrious founder of our veterinary schools. It must, however, be confessed, that, in proposing this mode of cauterization, the object of Bourgelat was to turn aside and preserve the bulbs of the hair, and thus lessen the blemish of firing; and that it did not once enter his mind that he was adopting the best method of getting rid of chronic lameness. There was as little analogy as therapeutic intention between the two proceedings.

We will now relate the experiments which we have made in order to test the value of M. de Nanzio's operation.

CASE I.

Nov. 4th, 1836, M. de Nanzio himself operated on a lame horse belonging to the Hirondelles Company, that was believed to be lame in the hip-joint, and which M. Lebanc kindly placed

at our disposal. The operation was attended by the happiest results, and, at the expiration of twenty-two days, the animal, completely cured, returned to his work; but it should be remarked, that this animal had been lame only a month, and that that lameness was evidently diminishing at the time when M. de Nanzio performed the operation. This case, therefore, cannot tell much in favour of M. de Nanzio's plan.

CASE II.

A bay mare, seven years old, strong and well made, belonging to the establishment of the Citadines, had been lame in the left hind leg more than six months, and without any appreciable cause. All the means generally resorted to or known for lameness in the hip-joint had been used, and she was at length fired by one of us, according to M. de Nanzio's plan. The operation did not, at first, appear to have been productive of much good effect; but, at the expiration of twenty-five days, she began to improve, and became so much better as to be able to return to her usual work, of which she had for a long time been incapable.

CASE III.

A bay horse, six years old, belonging to the same establishment, that was lame in his right fore leg, without any apparent lesion or cause, was operated on by one of us in the prescribed way, below the scapulo-humeral articulation. He had been lame more than four months; but twenty days after the operation he was so much better that he was sent to his former work, at which he has continued ever since*.

The animals which were the subjects of the two last operations are yet slightly lame; but they are very much improved, and, instead of being altogether useless, can now apparently, and without impairment of health, render good service to their owners.

The plan recommended by M. de Nanzio has, therefore, in these cases, produced good results, and which we are happy to attest—and which good results have ensued after all the common methods of treatment had failed. We therefore, rendered fully sensible of the advantages that may be derived from this new operation, have the honour to propose a vote of thanks to M. de Nanzio, and a request that he will kindly transmit to us any future experiments which he may hereafter institute. We beg

* M. Bouley, at the present period, has operated with success, according to M. de Nanzio's method, on a mare belonging to the Purified-water Establishment, and which had been fruitlessly treated, during four months, in every other recognized way.

leave also to propose, that his Memoir shall be honourably deposited among the archives of the Royal Academy of Medicine*.

Memoir II.

As to the second Memoir of M. de Nanzio, on a new method of curing Laminitis, or Acute Founder in the Horse, we have not submitted this to the test of experiment. We shall have the honour of laying before you the motives which induced us to pursue a method of examination so contrary to that which we adopted with regard to the first memoir, and we trust that you will approve of our determination.

In order to appreciate the value of the treatment proposed by M. de Nanzio, it is indispensable to remind you, in as few words as possible, what is the nature of the affection recognized under the terms founder or laminitis.

This malady, which has its seat in the reticular tissue which envelopes the last phalange of the foot—the coffin-bone—consists primitively in a congestion of blood, which is soon followed by the most intense inflammation. This reticular tissue, which is also called *le tissue podophyleux* (the sensible laminæ), receives a great number of bloodvessels and nerves, and, consequently, possesses a very high degree of sensibility. Contained in a horny box, little elastic, when laminitis appears this reticular substance finds itself compressed on every side, and can only, very incompletely, enlarge itself. The most violent pain is the consequence of this organic construction of the parts; and soon all the phenomena of inflammation by strangulation exhibit themselves.

If, by the skilful use of the most active remedies, we are not able to arrest the progress of the evil, the inflammation speedily leads to a disunion of the reticular and horny tissues. An abnormal spongy production then developes itself between the bone of the foot and the anterior part of the hoof, forces the coffin-bone backwards, changes its direction, and places its tranchant border in relation with the vascular tissue of the inferior surface of the foot. From this moment percussion becomes exceedingly painful; the horse walks with great difficulty, going on his toes; and can no longer render good service to his owner, especially in the paved streets.

In some cases, few indeed in number, the disease assumes a still more aggravated form; one or more of the hoofs drop off, and the horse becomes totally useless.

* These propositions were adopted, and it was likewise determined that this Memoir should be inserted in one of the first fasciculi of the proceedings of the Academy.

A disease which may be attended by consequences so fatal deserves the fixed attention of every veterinarian, and, consequently, has long been the subject of his peculiar study. The nature of this malady, its seat, its causes, and the disorganization which it produces, are well known. It is also known that the treatment should have but one object, namely, the termination of this inflammation in resolution. Every other mode of termination is unfavourable, if not destructive. Copious bleedings, astringents, and refrigerants the most active, are the principal therapeutic agents we should employ in this case. When they have been used in good earnest, and in good time, that is to say, at the commencement of the case, they almost always are productive of good effect; and in a few days restore the animal to health. Let us now see if the new method of proceeding proposed by the author of the Memoir should be preferred to this.

M. de Nanzio having remarked, that the foundered horses which are left shod, without litter, and on the *pavè*, get well more promptly than others, has thought that a general compression of the hoof would be a good curative measure; in consequence he advises, when founder manifests itself, to cover the sole with pledgets soaked in salt water and vinegar, and to compress them on the part by means of a shoe furnished with a metallic plate, and which is kept on the foot by four or five nails. This plate, which is prolonged posteriorly towards the toe, is curved from below upwards, and presents two rounded openings, through which a ligature is passed, which surrounds the wall of the hoof, and strongly compresses it through its whole extent as high as the coronet, and even above it. The author also recommends a cooling regimen, cold baths, and bleedings, either at the jugular or the foot. In a word, he prescribes the rational treatment already recommended, and the good effects of which we have just stated. M. de Nanzio adds, that, at the end of a few days, the animal will be found to be completely cured. He seems to be very much attached to his peculiar method of proceeding, and attributes his success to compression, which he eulogizes in very high terms.

If it is true, as we have advanced, that the pressure of the hoof on the congested or inflamed tissues is one of the principal causes of the serious character which laminitis presents, we cannot conceive that compression, established through the whole extent of the hoof, can be a curative measure. On the contrary, we think that such a mode of treatment is irrational, and would even become dangerous if, as the author advises, the compression was continued above the coronet. It also seems to us passing strange that any advantage can arise from leaving a foundered animal

shod, and on the *pavè*. In our opinion, these circumstances, by increasing the irritation and the pain, could not fail of aggravating the disease.

Besides the reasons which we have just stated, and which are quite sufficient in our minds to prevent our sanctioning this proceeding, another motive has prevented us from making any expement to test its efficacy, and that is—our author uses, in the treatment of founder, not only compression, but all the other recognized means which we daily employ with success against this malady. If, by this combined treatment it should happen, as it is presumable that it would, that some animals are cured, it will then remain necessary to discover whether the success depended on the proceedings of M. de Nanzio, or, rather, whether it was not obtained in spite of his compression, and whether it was not the effect of other therapeutic agents.

We are far from denying the good results which may be obtained in many cases from compression moderately applied; but we persist in our belief, as we have already stated, that it will, generally speaking, be more unfavourable than advantageous.

On the whole, your committee has the honour to propose to you a vote of thanks to M. de Nanzio, for the Memoir which he has transmitted to you.

DUPUY. BOULEY, *Reporter.*

Recueil, October 1837.

ON FRACTURES OF THE EXTREMITIES IN THE HORSE.

By Mr. THOMAS WALTON MAYER, *Newcastle-under-Line.*

THE attention of the readers of THE VETERINARIAN has been directed in your last two numbers to cases of fractures: and, although the facts have been ably stated by your correspondents, I trust the subject is of that interest to afford a sufficient apology for my offering a few further observations.

The truth of Mr. Friend's statement, of sudden fractures in the limbs under circumstances apparently not sufficient to produce them, being, I think, fully established, I shall direct my observations to the following points:—

1st. That fractures take place, and the bones do not immediately become displaced thereby.

2dly. To support Mr. Friend's assertion, that they are curable.

3dly. To prove that simple fractures of the legs are curable in many instances where they are displaced.

4thly. To shew the importance of these facts in veterinary jurisprudence.

It was on May 14th, 1831, that my attention was first directed to this subject, having been called in to see a horse that had had a kick on the tibia, which apparently had fractured it. Two days afterwards, while at work (for little notice was taken of it by the owner), the bones became displaced, and protruded through the skin. It was in this state when I first saw it, and I had the utmost difficulty in persuading the man that the tibia was broken. The animal was destroyed.

Since that time I have seen many similar cases, in which the horse has worked for some time previous to a displacement of the bones. In a case that happened recently the horse was a fortnight from the time of the kick before a displacement of the bones took place. He was, during that time, turned out with the other horses, and regularly exercised. The external wound nearly healed; the inflammation up the leg very much abated; and the horse was very little lame. The servant, on going into the stable one morning and finding him lying down, naturally roused him. The sudden exertion displaced the bones previously fractured, and the man beheld his horse dangling a broken leg, with the bone protruding through the wound that had been nearly closed.

It is from such instances as these that we draw our conclusions, that fractures often take place, and the bones do not immediately become displaced thereby. It is, however, extremely difficult, if called in to see a horse that has had a severe kick, to say whether there is a fracture or not, if there is no displacement.

Now it strikes me, and I think it will be apparent to my friend Mr. Simonds, if he considers the matter a little more, that such fractures, where there is no displacement of bone, are curable. The principal points that we have to regard in effecting this object are twofold; first, to keep down excessive pain and inflammation; secondly, to prevent the bones, if possible, from becoming displaced. The neglect of this is the grand error which both Mr. Friend and Mr. Simonds have committed in their treatment: for where is the use of your bleeding, physicking, lotions, &c. if you use no endeavours to prevent that which you most dread, namely, a displacement of the parts? Where, therefore, I suspected a fractured limb, I should, in addition to the other remedies, adopt the use of splints and bandages, taking care that they were not applied too tightly at first, or before the inflammation had in some measure abated. The bandage may then be tightened according to circumstances. It should be kept conantly wet with cold water and astringent lotions. I need scarcely add, that the animal should be kept as quiet as possible.

By the adoption of such means, I certainly do think that fractures, where there is no displacement of bone, are curable; but I will even go further, and state that fractures where there is a displacement of bone may frequently be cured. I will narrate a case in point.

Towards the close of last year a horse was kicked on the outside of the tibia. Little notice was taken of it at the time; on the next day, however, the bones were displaced: there was a simple fracture of the tibia. Having wrapped an adhesive plaster round the leg, I applied three splints on the outside, and three on the inside; the edges meeting at the back and front of the leg—bandaging the whole leg from the fetlock to the stifle; and the limb being kept constantly wet with cooling applications. Not one untoward symptom took place. The horse now walks with a slight limp, and seems going on as favourably as it is possible. Another case, in which the larger pastern bone was fractured and displaced, has likewise done well.

I wish to direct the attention of the profession, and the public at large, to the importance of these facts in veterinary jurisprudence. It is generally believed by well-informed persons, that it is scarcely possible for a horse's leg to be fractured by such trifling occurrences as those mentioned by Mr. Friend, and that if it is fractured it is impossible for him to walk, much less to work, without displacing the bones; and that fractured limbs are incurable. It is of importance that these points should be settled in the mind of every veterinarian, because we may be called upon in a court of justice to deliver our opinion, and upon that opinion the case may sometimes depend.

The truth of these remarks will be evident from the following fact, which occurred in this neighbourhood, and with the statement of which I shall close my letter. A man threw a stone at a horse while ploughing in a field, which hit him on the inside of the tibia. The animal finished his work, and walked home afterwards. The bones, however, became displaced in a day or two, for the tibia had been fractured by the blow, and the owner was compelled to destroy the horse. He took a warrant out against the individual, and brought him before the magistrates. The magistrates, upon hearing the case, decided against the party aggrieved, considering it impossible that the horse could have worked after the leg had become fractured.

ON ENTERITIS.

By Mr. W. A. Cartwright, *Whitchurch.*

It has been my intention for some time past to make a few remarks on enteritis, and bowel complaints generally. The discussion at the Veterinary Medical Association has been a further incentive, and I have therefore sent you the following observations:—

I consider that there are no complaints to which the horse is more liable than those affecting the bowels: their causes so various; the difficulty in positively deciding on their nature, requiring the greatest tact, talent, and discrimination; and yet the great carelessness and indifference there is in farmers and the public in tampering with such diseases, and losing for the veterinarian the first and most important step in their cure, viz. time at the outset for attacking the disease. Oh! how often is it the case, that we are indignant to see valuable horses sacrificed by their owner and ignorant villains quacking them; giving them sometimes the most trifling things imaginable, at other times, the most disgusting and destructive. I have had a great deal of experience in such cases; and I speak with the firmest conviction when I assert, that farmers and others never err more than they do here in taking such cases into their own hands, or allowing them to be treated by some of the most ignorant of the community. That some are soon cured, and *apparently* by trifling means, we all can admit; but that a great many others require the greatest care, skill, and attention to get them well no one can deny. The mischief I consider is here—every one has a "receipt," and most persons reason, when a horse lies down, "oh! 'tis the belly-ache, I will soon cure him;" being wofully ignorant at the same time of the cause of that pain; little dreading or knowing that there may even be violent inflammation from some of the many causes well known to veterinary surgeons, and for which their remedies must be rank poison.

Mr. Hutchinson says, in his essay, that in cases of enteritis "there is invariably obstinate constipation of the bowels." Now, as far as my experience goes, I cannot at all agree with him; for I find that out of about thirty cases that I have notes of (and I have treated a great many more) there are not above three or four patients that were at all constipated, and those but in a small degree, and the constipation, I fancy, but little concerned in producing the disease. In some of the cases, I acknowledge, the large intestines have been tolerably full of food; but which, on opening them, was found to be of a pulpy consistence, and pro-

bably might have been a little softened by aperient medicine. Upon the whole, therefore, I am inclined to believe that, as Mr. Simonds observed, "constipation is a mere bugbear;" but at the same time it would be absurd to deny, that cases do sometimes occur solely from that cause. I recollect a colt dying the day it was foaled, when there was great constipation and inflammation, and which were apparently, from the symptoms, the cause of death.

Another symptom that Mr. H. mentioned was that of tympanitis; but this, like the other, is often entirely absent in enteritis until a short time, in many cases, prior to death. I have seen several instances in which, to all appearance, inflammation had destroyed the horse from violent distention of all the bowels: in one case this resulted from eating young grass, and another from feeding on young clover. The quantity of green food found in them was not great, but the distention was excessive.

It may be said that, in these cases, inflammation was a primary affection, caused by the young grass; but, for my own part, I believe that, whatever stimulating quality the food may have had on the bowels, the gas so evolved had a great share in producing death by distention.

In one case I introduced the trochar after death, in order to try its effect, and through which a great deal of gas escaped; and I find in my note-book, at the end of one of the above cases, in the year 1829, the following observations:—"From this case, and several others that I have seen, I conceive it would not be an improper procedure to puncture the large intestines with a trochar, as it frequently occurs that the air cannot be expelled by the usual means, and is kept there as a continual irritant to the bowels, and impeding respiration by the distention:" so that it will be seen I had then thoughts on the subject of intestinal puncturation, and which Professor Stewart, of Glasgow, has brought to the test in the very interesting and successful case which he has recorded in The Veterinarian in 1836.

Sometimes we may have great distention of the small intestines, and yet not visible to the eye externally. I have seen a case where the small intestines were distended with water and flatus almost to bursting, and in a most violent state of inflammation, caused by drinking cold water, and this producing strangulation just before their termination in the large intestines.

Mr. H. says, that "the mode to distinguish between enteritis and other intestinal diseases is simple." I grant you in many instances it is; but in others there is great difficulty in deciding positively where spasm ends and inflammation begins, and particularly so in cases of strangulation, irritation, constipation, &c.

What said Mr. Spooner on the subject? "It is much to be deplored, that we have not yet attained this knowledge of our art." I fear but few are able positively to say where there is invagination or strangulation—it can be but supposition at most. I have seen seven or eight cases of introsusception and strangulation, and never yet could be positive on the matter; indeed, in one case, and which I sent to you (*vide* VETERINARIN, vol. viii, p. 380), there was no pain evinced to indicate it in the least.

The President, Mr. Sewell, observed, "that the presence of enteritis and amount of inflammatory action may often be detected by the degree of heat felt as the hand passes over the external part of the abdomen." It may be so, but I doubt it.

There is one remark of Mr. H.'s that I am rather surprised at, and which is, "that in colic there is seldom acceleration of the pulse." Now, every one must know this to be contrary to all experience; and I shall therefore pass it over. I have now and then been puzzled with the state of the pulse in connexion with other symptoms; but a knowledge of its variety is of the greatest consequence, and will seldom, if ever, mislead.

Another error Mr. H. has fallen into, and it is, that in colic the horse seldom lies on his back, and that in enteritis he invariably does. Now, on this subject I again perfectly agree with Mr. Spooner, that the contrary is the fact. I have seen horses often roll on their backs in enteritis, but not nearly so frequently as in colic; and this disposition has continued in the former disease, more or less, until the horse had no longer sufficient strength to put himself in this position. I consider the pain far more severe in colic than in enteritis: in the former the spasms are more violent, and in the latter, although very severe, the patients seem more to bear up against it.

It was remarked by Mr. Spooner and others, that the horse often sits upon his haunches when there is rupture of the diaphragm and protrusion of the intestines into the chest; and the same symptom, Mr. H. says, takes place when there is strangulation, or rupture, or displacement of intestines. I well recollect several instances where this symptom was present. In one, the horse had been very hard run from Liverpool, and about the country, in consequence of the owner (a native here) having fallen from the pier head and being killed (you can sympathize here, Mr. Y.!), and the horse was under my care for nearly a day before he died; but I am sure this symptom was not present, although there was a rupture fifteen or sixteen inches long in the diaphragm, and nothing else the matter with him.

Another case of rupture of the diaphragm I sent to THE VETERINARIAN, vol. vi, p. 106, and where this symptom was also

absent. In one case of inflammation of the bowels the mare was heavy with foal, and ill most violently for twenty hours; ten quarts of blood were taken from her; her sides blistered, and a good deal of medicine given to her. She carried her foal, and did well; but before she got better she nearly lost the use of her hind quarters, especially on one side, and would sit on her haunches. She then voided a great quantity of water; the weakness then seemed to disappear, and she soon got better.

In one case of inflammation of the small intestines the horse sat on his haunches for the first six hours, with very little intermission; and when he died about about one yard and a half of gut was found to be inflamed, and lay, in a great measure, against the diaphragm.

Now, in these cases it will be seen, that there was rupture of the diaphragm, and no sitting on the haunches; and also, that there was sitting on the haunches and no ruptured diaphragm.

One can well imagine that, in the one case, sitting on the haunches may have given relief in taking off the pressure that existed between the inflamed bowel and inflamed diaphragm; for it is a curious fact, that often, when the bowel is inflamed, the peritoneal covering of the diaphragm contiguous to it is more or or less so. I believe, also, that when the horse lies on his back he obtains relief thereby, the expansion of the abdomen being more freely allowed, and the pressure that may occasionally exist being taken off. I recollect a horse rolling on his back, and lying in that position against the wall for upwards of an hour; he then tumbled over on his side, got up, and was well.

On the point, whether there is more pain in the large intestines than in the smaller ones, it is difficult to give an opinion; but I think there is little difference.

It was observed by the President, that enteritis was sometimes caused by over-exertion; and I think there can be no doubt about it. How often are there cases brought to us out of the field, from the thrashing-machine, and other laborious work, that shew inflammation or great irritation, and in all probability from such a cause. I saw a case of an in-foal mare, that died of enteritis, and I thought then, and think so still, in consequence of great labour in drawing manure for potatoes. I also can call to mind two fatal cases of in-calf cows, that had the same complaint from having travelled a long journey. Also several cases where horses had been hard ridden, and the attack coming on as soon as they were brought into the stable. I think it is easily accounted for in these cases, even upon the common principle of pressure; or if I may so say, of friction, by the continual swaying of the belly and its contents, and the sympathy, as

Mr. Spooner observed, existing between the voluntary and involuntary muscles.

Cold was also mentioned as a cause. Who can doubt it? either externally or internally applied. Most of us know from our own experience, after exposure of ourselves generally to cold, or getting the feet wet, how soon, in many cases, the bowels become affected; and so I have no doubt, in many instances, the horse suffers from the same cause. I had a most obstinate case last year in a horse belonging to a clergyman in this town, that went a distance of fourteen miles to a sale. He was put into a cold shed, and remained there for three or four hours. On starting for home, it was found that the horse had been pawing: he came home with difficulty, and lay down as soon as he got in the stable, and was very ill all night. I bled him several times, and gave opium, and he got well; but he had no opening medicine until a day or two afterwards.

As to the drinking of cold water, I know many instances in which enteritis was produced thereby; I will just allude to a few:—One was that of a young healthy grey mare, the property of a surgeon in this town, that had been under my hands for ophthalmia. I ordered her not to have cold water for some time, having had some aperient medicine a few days before; but the gentleman persisted one morning in her having it, and the consequence was, that in a short time afterwards violent symptoms of spasm came on, and which ended in excessive peritoneal inflammation of the whole of the small intestines. The muscular coat was scarcely at all affected. Other cases I have known produced by turning horses out at night to drink their fill at a pit, let them have been working ever so hard. The consequence has been, that before morning they (the owners) have been disturbed by a noise in the stable; and in some instances the horses have actually broken out of the stable, and been found rolling about in the yard. In several cases, strangulation was produced from this cause. From the conjoint effects of exposure to cold and over-exertion, the body, in many instances, may be so debilitated as to be in a manner predisposed to the disease.

A few years ago, when our cavalry were during the summer at Ellesmere, a great number of horses were suddenly taken ill with shivering and restlessness, in consequence of having had cold water given them to drink too soon after coming home from duty. To some a large dose of opium was administered: others were trotted about and got well; but many were obliged to be bled, and attended to for some time afterwards.

There was a very just observation made by my namesake, "that sometimes it has occurred when the horse has been at

grass, the eddish having been strong, or the meadow lands coarse and rank." I saw a fine cart-horse, belonging to a farmer near this place, that shewed symptoms of belly-ache, or indigestion, on three successive Fridays, the cause of which I at length traced to his having eaten some rank grass that had grown on a flooded croft, near the house. The grass was discontinued, and he ceased to have the attacks. I recollect another farmer having three of his horses attacked, one after the other, in a similar way; but they got well. Two other cases, from eating young grass and clover, I have mentioned under a previous head.

On vomition, Mr. Daws remarked, "that he had always found, that when any obstruction had taken place, either through hernia, strangulation, or intussusception, efforts to vomit were observed:" if so, it does not at all agree with my observation, as I never saw it, with only one exception, and which was slight and momentary, and which I thought as likely to have arisen from the medicine, in all the cases that I have witnessed, although I have generally been with my patients as much and as long as I could while they were labouring under the disease. In fact, I took a sort of interest in bowel complaints, and that in consequence of having had so many under my hand.

There are some cases of a very insidious and deceptive character, the principal and prominent symptoms of enteritis, during life, being in a manner absent. The pain may be, to all outward appearance, slight—nothing more than a little uneasiness—and the respiration scarcely affected, until within a few hours of death, when the symptoms have been as violent as in other cases.

On opening the horse in such cases, very slight vestige of the disease is to be seen, though generally sufficient to shew what it was. There are others where the symptoms have been exceedingly violent, and yet, like the last-mentioned, little ravages of the disease were to be seen. In these latter cases must we attribute the slight inflammation discovered to the good effect of bleeding; but that, and the great debility produced by the disease, the contrary effect on the constitution?

In one case I recollect offensiveness of breath and a most offensive discharge from the bowels; and on opening the horse, there was about a yard of the small intestines in a state of mortification. This was the evident source of the smell and the discharge. There was little pain in this case during the seven hours previous to his death that I saw him.

Last summer I had a case of superpurgation, brought on by eating a quantity of oats in the straw; and in two days after this, and while carrying more oats, the horse escaping and

drinking a quantity of water at the pit. When I first saw him, for he had been purging ten days, he was not uneasy, would eat plenty of grass, but not much hay or corn; the pulse and respiration were natural, and there seemed but little the matter with him, except the purging, and a peculiar hollow appearance. I gave ʒss opium, &c., night and morning for about four days, and he got much better; but on the next day he was as bad as ever. I continued the opium and other medicine according to circumstances. I bled him, and blistered his abdomen; but the blister took very little effect, and on the twenty-second day from the time of eating the oats he died. On examination, the whole of the mucous membrane of the large intestines was of a blue-black colour, with streaks almost black, and completely disorganized. The smaller ones were in a similar state, with the exception of about a yard or two of the duodenum. It was clearly confined to the mucous membrane. In this case there was little apparent pain; but a seeming uneasiness, and rarely lying down.

I have seen some cases of inflammation of the bowels where death has supervened, and where but little marks of inflammation have been present; but there were thousands upon thousands of small kindle-worms amongst the food, and attached to the membrane, both in the small and large intestines, especially in the latter: in these cases I have found the food in the intestines to be drier than usual. Now, whether the worms were here the cause of the great irritation and dryness of the food, I leave for your consideration.

Some few cases I have had of great irritation and purging in the rectum, produced by the attachment of bots: I have removed them, and the horses were soon well again.

A few years ago a farmer took to a large farm in this neighbourhood, and in consequence of having a great deal of work for his horses to do they became very poor. He was recommended to an ignorant fellow, a blacksmith, of the name of Cliff, to give them a nourishing drink or two; but, instead of that, he gave to four of them something or other that brought on violent purging, and he had them all rolling about the stable at once. I was sent for, and found one dead; another died on the next day; another in the course of three weeks; and the fourth lingered on for three or four months, and died at last, purging more or less during the greater part of the time. The horses thus destroyed were worth £70 or £80, and the rascal of a farrier not worth 2d.

Another farmer had three valuable horses destroyed by the same disease, in consequence of a druggist having prescribed some worm medicine. This pretender was obliged to pay very

handsomely towards the replacing of them, or an action would have been brought against him.

A gentleman's servant some time ago gave a dose of physic to his master's horse, and it did him much good: he gave him another dose some time afterwards, of double the strength, and it killed him. —His reasoning was this: that, as the first dose did him a deal of good, one double the strength would do him double the good.

Treatment.—The treatment of these cases depends entirely on the supposed cause of the disease. If the pain and state of the pulse indicate nothing more than spasm of the bowels, I generally give ℥ij spirit. tereb. combined with ℥ij tinct. opii, and twenty drops of ol. menth. pip.; and if this does not answer the purpose, I repeat it in half or three-quarters of an hour, and have recourse to a pretty severe bleeding; indeed, in many cases I bleed at first, in order to save trouble, and consider it a prudent practice to adopt in the generality of cases.

As to giving purgatives in enteritis, I think it, upon the whole, not a desirable practice, seeing, as I said before, that in most instances we have no reason to believe that constipation is present; yet, undoubtedly, there are cases where it is essentially necessary to do so; indeed, in many instances I am accustomed to give a *little* so as to produce an *aperient* effect; but this is oftener done to please the owner than I think is beneficial, and which I do not intend to do so often in future.

It may be said, that you are only applying the medicine to a membrane that is not principally diseased, and that it may act as a sort of counter-irritant to the muscular or peritoneal coats; but I should be doubtful of this, as there is great sympathy between the coats. If you get rid of the inflammation, in most cases the bowels will act of themselves, or be induced to act by merely giving a little aperient medicine in a day or two after the prominent symptoms have subsided. Do not be in a hurry here! That opium will produce sleep in the horse I have not a shadow of a doubt, as I am sure that I have seen it scores of times whilst attending horses with colic and enteritis. I formerly gave it in half-drachm doses, but within these few last years have given it in drachm doses, made, so as to insure his getting it, into a very soft ball, and in the course of half an hour, or at most an hour, its effects have been produced in a most evident way by his hanging his head and nodding, even until his nose has often touched the ground. This has continued for half an hour to an hour, and at the same time the pulse has been considerably lowered, and the system calmed. Sometimes, of course, I give it in a liquid state. I have given it both before and after bleed-

ing, but with greater effect in the latter case. Wherever opium is given, there cannot be any great objection in administering aperient medicine at the same time, and, thereby getting rid, as Mr. Youatt observed, of both enemies (if they exist) at once.

In respect of applying counter-irritation, I have to say, that I object, with others, to the free use of the spt. tereb. and ammonia: they only irritate, and destroy the hair, and produce, as the President observed, a permanent blemish. I have seen it repeatedly. I doubt whether the use of mustard is beneficial. It is a tremendous irritant to the skin, and, like the turpentine, produces too great a disturbance in the *system:* it is not sufficiently local in its action, and, perhaps, does more harm than good. Wherever the application of the cantharides can be made in conjunction with a *little* of the turpentine or mustard in a liquid state, I think it better practice. The ung. lyttæ is too often rubbed off in their struggles. No external application, in these cases, I think more likely to produce good effect than the firing of the belly with the hot iron. The insertion of rowels or setons I have often found serviceable; for it is too often the case that blistering takes but little effect in the early stage of the disease, and that the setons or rowels are often observed to rise and discharge quite as soon as the blister. But are blisters, setons, or rowels of much use, except they rise in the acute stage? Where the cases are of a more chronic character, they would.

The great, the all-important measure must be, *early* and decisive bleeding, and the administration of ʒ doses of opium, aided by warm clothing and bandages, the animal being kept in a tolerably warm airy place. If the first six hours are lost, as is too often the case, it is a serious affair, and uncertain in its result. I have never seen more than two successful cases in which the disease has continued, without any abatement of the symptoms, to the twenty-fourth or thirtieth hour and then recovered. Most that have died have done so within twelve or fourteen hours.

A CASE OF RABIES IN A CAT.

By Mr. J. A. Ainslie, *London.*

The following brief case may, perhaps, be permitted to occupy a corner as connected with your valuable lectures on the symptoms and post-mortem appearances of rabies. I trust that you will soon regain sufficient health and strength to enable you to continue and complete the subject.

A cat, about the 18th or 19th of January last, was supposed to have been bitten by a dog—there was blood about the head, and the ear was evidently lacerated.

On the 1st of February the owner noticed her to be unusually dull. On the 2d this had evidently increased. She sat in the corner of an out-house, apparently half asleep and half awake, and took no notice of any one.

On the 4th of February the owner, somewhat anxious about her, went to see what was the matter; and endeavouring to take her up, in order better to examine her, she bit him through the thumb, and made her escape into the back yard, and took refuge in the garden, near the rails. A boy, an apothecary's lad apparently, passing soon afterwards, saw her there, and endeavoured to coax her towards him. For this purpose he put his hand through the rails. She immediately flew at his hand, and apparently bit him severely. Every inquiry has been made respecting this lad. Several persons saw him crying with the blood streaming down his hand; but no farther intelligence can be obtained respecting him.

On the 5th, she flew upon the dog, and sadly scratched and bit him. She was, with difficulty and danger, torn away, and got into a basket, and conveyed to my hospital. She was there put into a rabbit hutch, and the door secured.

When she seemed to be a little quiet, I began cautiously and carefully to examine her. There was no particular wildness in her eye, except when she was excited. Her lips and mouth were considerably swelled—her gait, as she occasionally shifted her position in the hutch, was staggering. If any thing was presented close to the wires of the hutch, then her eyes glared fearfully, and she darted at it with the greatest possible fury. She frequently darted at some object that existed only in her disturbed imagination. She was often employed in scraping the dung from the corners of the hutch, and she would get part of it into her mouth, and carry it from one place to another. Various things were offered her to eat, but she would not touch one of them. Water was within her reach, but she did not lap it; yet whenever a little of it was sprinkled upon her, she fell into violent convulsions. The staggering gait increased until the hind limbs were altogether palsied.

On the 6th she died. The stomach was filled with dark vitiated bile, partially mingled with a thick glairy matter of a lighter colour. The whole of the mucous membrane of the stomach was dark, and highly inflamed, and particularly about the pyloric orifice. There was one spot of ecchymosis of a considerable size.

The intestinal canal was altogether free from inflammation. There was little or no inflammation about the larynx, but the tongue was swelled and lacerated in various places towards the dorsum, and probably by the animal's own teeth. The trachea, bronchi, and lungs were healthy. The membranes of the brain were slightly congested, but nothing followed the knife to whatever part of the substance of the brain it was applied. There was not any effusion in the lateral ventircles.

CONTRIBUTIONS TO COMPARATIVE PATHOLOGY.

No. XIX.

By Mr. Youatt.

VERTIGO—EPILEPSY.

1833, *Nov. 4th.*—A Stanley Crane. Totters and staggers as it walks; and when it stoops to take its food, seems as if it would topple over. Give two grains of calomel and one of antimonial powder.

5th.—The walk is more staggering, and the bird weaker. Give a desert spoonful of the castor oil mixture.

6th.—Evidently better; walks stronger, and picks his food more cheerfully Repeat the mixture.

7th.—Very much better. Suspend mixture.

9th.—Begins to stagger a little again. One grain each of calomel and antimonial powder.

10th.—The powder vomited and purged him, and he seems again well. Give the powder on each of the three next days.

16th.—The medicine has been discontinued, and the bird staggers again. Resume the daily exhibition of the powder. The powder was continued during a week, and then every second day for a fortnight, and the bird once more seemed quite itself.

1834, *Mar. 6th.*—The disease has again appeared under an aggravated form; the bird staggers about a little, and then falls and struggles, and has a regular epileptic fit. Give one grain each of calomel and antimonial powder daily.

8th.—Has had two fits since the last report. Continue the powder.

10th.—The fits are daily. Give him two grains of emetic tartar, and afterwards continue the powder.

12*th.*—They now occur two or three times daily. Double the quantity of the medicine.

14*th.*—The fits continue, and the bird gets decidedly weaker. Continue medicine.

15*th.*—The fits continue, and the bird is getting rapidly weaker. Give quarter of an ounce of the castor oil mixture daily.

16*th.*—Another of these birds is now epileptic. Give the mixture to both.

18*th.*—The fits are not so frequent in the first bird. The second has them several times in the day. Continue mixture.

20*th.*—Both the birds are getting better; the fits are neither so violent nor so frequent. Continue mixture.

22*d.*—No fits during the last two days. Omit medicine.

28*th.*—The fits have returned, and with them—they had not before been seen together—the staggering gait. Give the calomel and antimonial powder as before.

April 1*st.*—The fits have again ceased. The birds are sadly poor, and I want to leave off physicking them as soon as I can.

They very slowly recovered their appetite, flesh, and spirits, and became perfectly well.

They are so at the present moment (Feb. 1838).

HEPATITIS—ACUTE.

1834, *Jan.* 23*d.*—Capybara. He refuses his food; lies listlessly about; the flanks are fallen in, and respiration quickened. Give six grains of calomel.

25*th.*—The medicine operated well. He has not appeared to suffer much, but he died this morning without a struggle.

He was externally unusually fat; internally there was little adipose matter. No inflammation of the intestines, but the omentum somewhat thickened, and adhesion between it and the fundus of the bladder. The liver was highly inflamed, and its substance almost pulpy. Some inflammation had been communicated to the portion of the stomach in contact with it. The stomach contained half a pint of fluid that resembled blood and bile mixed. There had not been the slightest change in the food lately; but there had long been chronic inflammation, which, from some unknown cause, had lately taken on an acute character.

ENTERITIS, WITH CONSTIPATION.

1834, *April* 1*st.*—Ruffed Lemur. Dull—lying curled up in its cage—with difficulty induced to move—a sadly altered and depressed countenance—the muzzle cool, and no heaving at

the flanks. Give two grains each of calomel and antimonial powder, and, if it does not operate in six hours, repeat the dose.

2d.—Both doses have been given—the animal will not eat or move. Give an ounce of the castor oil mixture (three parts of castor oil, two of syrup of buckthorn, and one of syrup of white poppies) morning, noon, and night, until the bowels are relieved.

3d.—The bowels have been acted upon, and although the countenance of the lemur is yet deplorable, he is certainly better—he has lapped a little milk, and eaten a bit of apple. Give an ounce of the mixture daily.

5th.—Bowels well opened, and he looks a little better; he cannot, however be coaxed to move, and laps very little. No medicine to-day.

6th.—Still improves, but very slowly. Give one dose of the castor oil mixture daily. Coax with warm milk and roasted apples.

8th.—Is getting evidently better. Give the medicine occasionally, so as to keep the bowels open.

10th.—Improving; fæces hard. Give a dose of the medicine.

12th.—Eats nearly as usual, but has not quite recovered his spirits. Discharged.

May 4th.—Has not yet quite recovered his spirits or appetite, and is somewhat too costive. Give occasionally half and ounce of syrup of buckthorn in his milk.

The animal gradually got well, and is so at the present moment (Feb. 1838).

DYSENTERY.

1834, *April 27th.*—Sing Sing. Did not eat with good appetite yesterday. To-day he altogether refuses his food; shivers; muzzle hot and dry; purges; only a little fæces discharged at a time, but frequently and forcibly ejected, and mingled with mucus. Give four ounces of Epsom salts, abstract a pound of blood, and take away all food, except a mash frequently renewed.

28th.—Shivering gone; feeds a little; but the purging is greater in quantity, and more frequent; it is not, however, ejected so forcibly, nor has it so much mucus mingling with it. He begins to cough. Give, morning and night, of opium and digitalis each half a drachm, a drachm of antimonial powder, and two drachms of nitre.

29th.—Purges as much as ever; eats very little, but looks brighter. The muzzle is not so hot, and there is a dew upon it, but to a very slight degree. Continue treatment.

May 1*st.*—I do not like the animal; the countenance is anxious; it does not feed, but the purging is not so violent. He must have the same powder.

2*d.*—Decidedly worse; refuses to eat; breathes hard; sadly weak; anxious countenance; deathy-cold muzzle. I attempted to bleed him, but no vein could be raised, and he could not bear the ligature a moment. Give sp. nit. æth. ʒiiij, laudanum ʒij, Epsom salts ℥iiij, ginger ʒi, in gruel. In an hour afterwards he was dead. The rumen was filled almost to distention; the other stomachs were in their natural state. The liver and spleen was sound; the lungs were somewhat emphysematous, and shewing marks of old affection. There was peritoneal inflammation of all the intestines; but the mucous membrane, and particularly of the large intestines, was dreadfully inflamed.

THE METHODS OF CASTING AND SECURING HORSES FOR OPERATIONS.

By Mr. Harry Daws, *London.*

The operations to which the horse is subjected are but few, comparatively speaking; but it is essentially necessary (when we consider the amazing strength of the animal, and the disposition which some horses evince to injure those around when pain is inflicted, and too often unnecessarily) for the safety of the operator, that his tackle for securing his patient should be of the best manufacture, and as simple as possible in its construction. With this view I am induced to address my observations principally to the junior branches of the profession on a subject of such importance, many of whom, I am sorry to say, never placed a strap on a horse's leg, although in possession of a diploma. Here I would remark, that, as self-preservation is the first law of nature, they cannot make themselves too expert in all the manual operations of casting and securing their patients previous to operation, instead of entrusting their own lives and limbs to the carelessness or caprice of others. I shall briefly comment upon the principal operations, and describe the tackle necessary, in my opinion, to be employed.

These consist of blinds, twitch, side-line, casting-hobbles, cross-hobbles, broad body-roller, with back rope, casting-bridle, and webbing. Docking is the only operation that should be performed without casting, although, I dare to say, many members

of the profession fire and nick standing; but I do not consider it safe for the operator or his patient, nor can I believe that we are warranted in hazarding the occurrence of any injury to either.

The twitch, blinds, and side-line, are all that are necessary in this operation. Every body is acquainted with the twitch; but I would recommend, especially to country practitioners, the constant possession of this article upon a small scale, nine or ten inches long. It will occasionally prove a useful assistant, when otherwise absent.

The blinds are sometimes effectual in quieting unruly horses; they also preserve the eyes from injury. They should be generally twenty-five inches long and twelve and a half deep, with two semi-globular pieces of leather let in over the eyes: the straps attached to them should buckle on either side.

The side-line is a rope about seven yards long and one inch thick, with a hobble at the end; or the common casting-rope, with a hobble attached, will answer the same end: but it is necessary to keep one for the purpose, as it is frequently called into use at other times, when the patient undergoes castration, &c. Make a collar of one end, place it round the neck, affix a hobble round the hind leg; run the rope through the ring, and draw the hind leg forwards, and make it secure. This will prevent the horse from kicking or rearing.

A snaffle bridle with a plain bridoon bit I should recommend to be used on all occasions; a buckle on the top of the head, and one at the junction of the rein.

A strong broad leather roller, six inches wide, either with or without a back rope attached—or the side-line can be buckled to it—will be found very useful at the time of casting. "Order is gain," says the last veterinary author; so I would recommend the observance of his maxim in casting horses for operations. I have for years always thrown my patients on the off side, and turned them over when requisite; as for instance, when castrating or firing inside the hind legs, having the upper leg drawn forwards by the side-line; or, if the fore legs are the subject of operation, either of them may be released from the hobbles by affixing a hemp webbing around the foot, having previously buckled on the cross hobbles (which are nothing more than two hobbles connected with a strap to admit of lengthening or shortening) above the hock and knee. The operation being concluded, the hobbles are unbuckled, taking care always to release the under legs first.

While I am on this subject, I will acknowledge myself indebted to Mr. Gloag for his description of some improved hob-

bles (pages 88 and 174, volume 10, of THE VETERINARIAN). I have regularly used similar ones, but with such alterations as have rendered them more perfect.

Mr. James Turner and Mr. Ainslie, of London, and one or two more friends in the country, have also adopted my altered hobbles.

The alterations I have made are, first, in having the iron work a size larger, so as to admit of an easier passage for the chain, which, in my opinion, should not be more than eighteen inches long; the long Ds should be one inch and a half wide, and two and a quarter inches long in the clear. The squares should be made sufficiently large to allow the others to pass through them with freedom. Each hobble should have a curved buckle, two inches in the clear, the leather of the same width, and not less than half an inch in thickness, and four inches long, with a galling leather under each buckle, and the long D attached to it by means of an iron chape and rivets.

The strap end should not be less than eighteen inches long, with a square attached to it by the same means as above.

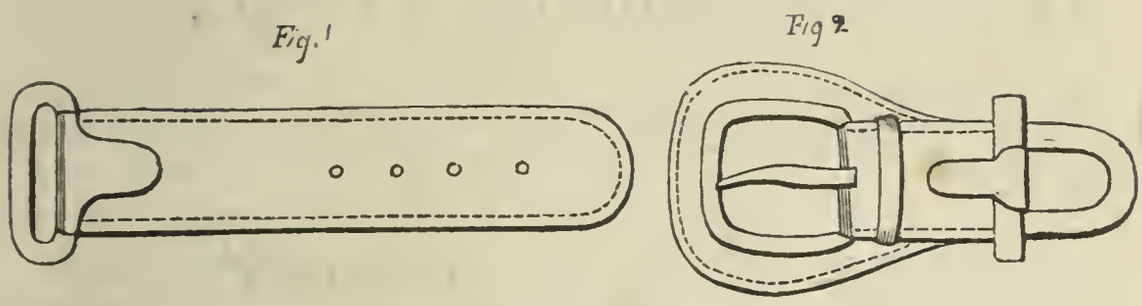
Instead of the *cottrell* recommended by Mr. Gloag, I have found it more convenient to have one of the long Ds made open at the curvature, and its end tapped for the screw, with its head downwards, which holds the chain as in the diagram p. 163. This hobble I always place on the near fore-leg, and it matters not which side the horse lies upon after the operation, as the thumb-screw is removed with more ease than from the cottrell.

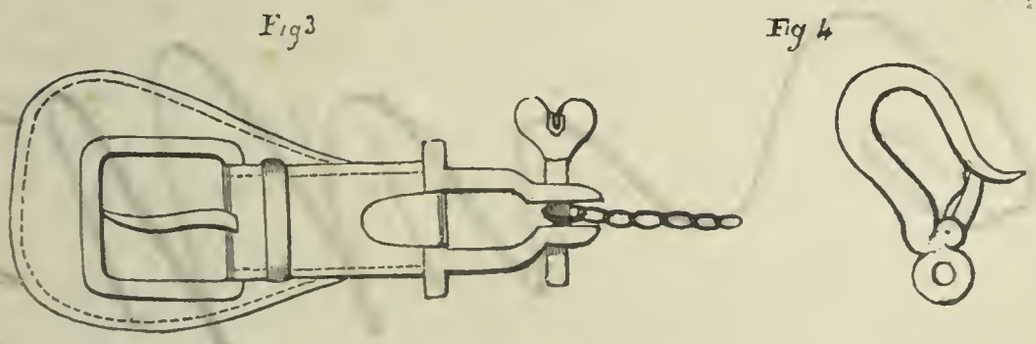
The hook for securing I have made with a spring, and there is no necessity for a small chain attached to it.

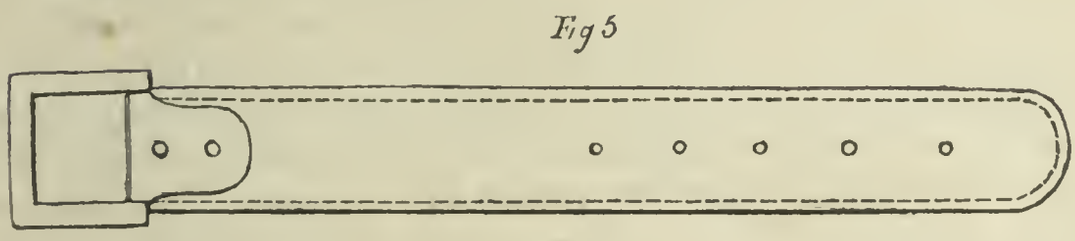
I have sent you for inspection a fac-simile of those used by me and the other gentlemen, before-named, and should be very happy to exhibit mine to any member of the profession at any time; or if practitioners in the country should feel inclined to adopt them generally, and wish for a sound, well-finished, strong article, at a reasonable price, I would refer them to the advertisement on the cover.

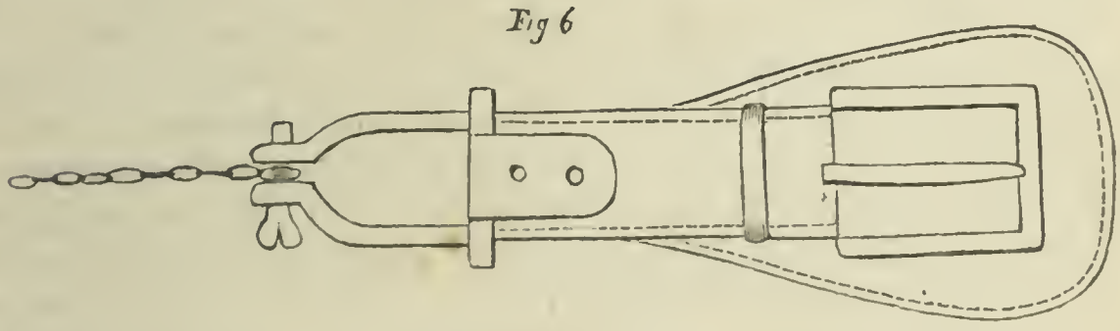
I had almost forgotten to remark, that Mr. James Turner has suggested the propriety of covering the chain with some material sufficiently strong to hold the legs together, while the operator and assistants escape in case of accident from the breaking of a link, the crack of which would be the signal for retreat. Although you may cast a horse ninety-nine times without accident, the hundredth may prove serious, if not fatal, in its results.

I have not tried any thing, but perhaps a covering of India rubber-webbing or leather would have the desired end.









1. Strap end—the square attached.
2. Buckle and D attached.
3. Ditto, with open D and screw.
4. The hook.
5. Strap end of Hobble—the square D attached.
6. Buckle end for near fore-leg—Galling leather and open long D with screw and chain attached.

THE VETERINARIAN, MARCH 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

Serious illness, attended by much suffering and debility, have prevented us from assuming our usual post in the present number. Our readers may be assured that, in after numbers, we will labour to recover our lost ground. The present number, however, contains much valuable matter—more than sufficient, we trust, to compensate for the lack of our periodical, and, sometimes, *maigre* contributions.

Mr. Y., to whom we sincerely wish a speedy and permanent return of health, will find the information which he requires in the work on "Cattle," and under the title "Free-Marten."

Messrs. M. and P. are perfectly correct; the more we examine the matter, the more we are astounded and ashamed. We believe, however, that the omissions—we refer to the names of those who have obtained their diplomas at the Royal Veterinary College—are confined to a part of 1835-36. All shall be corrected at the close of the present session; and, in the meantime, we do sincerely beg pardon of those to whom we have seemed to do injustice, and shall be thankful for any notice of omissions that have occurred.

Some of our readers are probably aware of the institution of a new veterinary society in this metropolis, entitled "The United Veterinary Surgeons' Club." The old club consists, with one or two exceptions, of those who have known, and understood, and valued each other for many a long year. There had grown out of this a pleasure and a charm in their periodical meetings, which they determined to place, as far as they were able, beyond the reach of accident; and therefore, a twelvemonth ago, they limited their club to the number of which it then consisted. Several candidates have since offered; but it was tedious waiting for dead men's shoes, and they determined to form a club of their own. The qualifications for admission to the club were determined to be, the possession of a diploma from some recognized veterinary school, or the public teaching of veterinary science.

Eight gentlemen, who were anxious for the establishment of such a society dined together on the 16th ult.and adopted certain regulations by which it should be governed. They were Messrs. Ainslie, Cheeseman, Daws, Hill, Jones, Morton, Simonds, and

Spooner. Mr. Daws, of Gresse Street, was elected Honorary Secretary.

We are glad to see so many respectable men forming the nucleus of this new club. May friendship and harmony preside over their meetings!—and then we doubt not that, while they are pleased with each other, the interests of veterinary science will be essentially promoted.

We acknowledge with many, very many thanks, the receipt of various communications on the subject referred to in the close of our leading article of the January number. Mr. T.'s was received this morning. Any others with which our friends may favour us must be received before the 10th of March, or they will not be available.

We are exceedingly sorry that the postage of certain letters, the whole of which we thought had been paid, should be charged to some of our friends. On the other hand, they must kindly look a little to the construction and folding of their letters, for *one* that we received in the last month, being charged to us by weight, cost 5s. 6d.

The first volume of a new edition of Hurtrel D'Arboval's Dictionary is announced; but we have not yet been able to learn whether it is an improved work or a mere reprint. We shall soon know, and our correspondent shall hear from us. In the meantime we would advise him to wait; for our continental brethren beat us out and out in the trickery of new editions.

We hope very shortly to be enabled to establish a correspondence in the very heart of Germany, and periodically to tell our friends what our brethren are doing there.

We cannot hear of any person to suit our friend in the West, nor do we think it probable that we shall. Why does he not advertize?

The operations recommended by M. de Nanzio are described by Italian veterinarians nearly 300 years ago. His rescuing them from oblivion, however, is no impeachment of his claim or his merit.

The receipt of Mr. M—'s letter gave us unfeigned pleasure. Let by-gones be by-gones for ever and a day. He will see one reason for the non-insertion of his letter, even had it arrived in time. To the cases to which he refers we should thankfully give insertion; nor should we object, by and by, to a little controversial writing. The thoughts may breathe, but the words must not *absolutely* burn. Y.

Veterinary Jurisprudence.

COURT OF QUEEN'S BENCH, Feb. 3.

ELMORE *v.* WILDASH.

Mr. Platt and Mr. Bayley conducted the case for plaintiff, and Mr. Thesiger and Mr. Higgins that of defendant.

Mr. Platt said this was an action to recover the value of a horse which the defendant had sold to the plaintiff, as the latter said, warranting him to be sound. The plaintiff had seen the horse at Oundle fair, and his man got on it to try it, when it picked up a nail. He immediately dismounted, and the nail was taken out of the foot. The horse was then taken home, and his foot dressed. Two days afterwards the servant of the plaintiff called upon the defendant's agent, and asked him if the horse was lame, or if he could say he was sound. The defendant's agent said he was quite sound, notwithstanding the accident. The plaintiff's man then agreed to purchase the horse for £60. He was taken in the string of horses to Biggleswade, where he fell lame; he was left there two days, till another servant of the plaintiff's came up, and he then led him twenty miles that day, and fourteen the next. The first day he travelled very well, and the second he faltered, and was left at Barnet, where he died from the effects of the nail. Under these circumstances the plaintiff brought his action to recover the £60 paid for the horse, together with the expenses to which he had been put. The following witnesses were called.

John Haines.—In February 1834, I was at Oundle fair, and saw Wright there; he had a dun horse, which he offered me for sale; he said it was the defendant's: he asked £55 for him. I tried him, and in trying him he picked up a nail in the near hind foot, and he then took the horse home. I saw Wright about three days afterwards, and he said he was perfectly right and sound. I then bought him as a sound horse for £60. I sent him away the same day in a string of horses. Wright gave directions to the man to take care of his foot, and soak it in warm water. I saw the horse two days afterwards; his leg was then much swollen. I had him walked out, and he walked very well. He was sent away with the string of horses, and was left at Biggleswade, where I found him, and I then led him about twenty miles: he travelled pretty fair. I stopped at Welling that night. I put a poultice on his foot; the next day I led him fourteen miles to Barnet; he then got very uneasy, and I left him at Barnet. I never afterwards saw the horse alive.

Cross-examined.—I was on the horse when he picked up the nail, which was immediately taken out. Mr. Elmore was present. The nail had penetrated more than half an inch. I took it out with my fingers. When a horse gets pricked in the foot it is not necessary to rest him, that I know of; the best way is to take care of him. I have no doubt that the prick in his foot would have occasioned his death if he had not travelled.

Then how came you to buy him?

Witness.—I had a warranty with him.

But would you buy a horse that you knew would die because you had a warranty with him?

Witness.—I did not know he'd die then; I did not suppose it would have killed him till after he died. I could not think much of the accident, or I should not have bought him.

Would it not have been better to let him rest?

Witness.—That's nothiug to do with me.

Would it not have been better to let him rest? I want to nail you to that.

Witness, considering.—But people can't wait for a horse, you know; they must go about their business: he travelled very well; he was not so ill but what he could travel; he went a little lame. I thought exercise was good for a swelled leg.

Suppose you were to run a nail in your own foot, would it be better to walk or sit still?

Mr. Platt.—I don't know, my Lord, if that is a proper question.

Mr. Thesiger.—I think it is a good illustration, though it may be a homely one.

Witness.—The horse stayed at Biggleswade two or three days, because he was too lame to travel. I took the horse from Biggleswade: when I took him from Biggleswade, he was not particularly lame but what he could travel.

— Provost.—I am a veterinary surgeon at Barnet; I was called in to attend this horse on the 27th July, 1834. I examined him; he had a puncture in the near foot behind, as if from a nail; he lived three hours after I was called in: he was dying when I first saw him; he died from mortification; the nail had punctured the coffin-bone; death must have ensued from such a wound; it was mortal; treatment might have prolonged the life a little, but the wound was mortal.

Cross-examined.—The animal not exhibiting lameness for two or three days would make no difference.

Mr. Thesiger then addressed the Jury for the defendant. He should contend that the horse had not received a mortal injury, but that he had died from the misconduct of the servants of the plaintiff.

Lord Denman.—I think that is clear from their own evidence.

Mr. Thesiger then proceeded to argue upon the evidence. He should shew that there was no warranty given, and that the horse was sound with the exception of the accident, to which the plaintiff himself had been a witness. Having proved this, he should entitle himself to their verdict. He then called—

Daniel Wright, a farmer at Kimbolton —I sold the horse to the plaintiff. Haines examined him immediately after he had picked up the nail. The next morning Haines came to me, and asked if I had sold the horse. I replied I had not. He then bought him, and said, provided the horse is lame, what is to be done with him? I said, if he is lame stop him on the road, and don't allow him to travel. I did not warrant the horse sound.

Cross-examined.—I have sold horses before to the plaintiff for the defendant. I never gave any warranty to the plaintiff in my life. I had offered this horse to Mr. Bailey, but not with a warranty.

Samuel Allen.—I am a farrier at Oundle. I used to shoe this horse. I was sent for to see this horse after it had picked up the nail. I dressed the wound; it was not in the frog, but in the foot. I examined the horse the next day; he was trotted up and down on stones: he did not go at all lame. If he had gone lame, it would have been right to have left him in the stable and dressed his foot. It was a bad thing for the horse to travel five or six days after it.

James Turner.—I am a veterinary surgeon, of Regent-street. After a serious injury of this kind, it is not always apparent immediately, but generally within twenty-four hours. From the horse not being lame the next day, I should say the injury was not so great as has been represented; but from utter want of care, it ended fatally. I consider that the travelling led to the death of the horse.

Cross-examined.—I have known a horse recover where the joint-oil had escaped; but the cure occupied twelve months. I have not known an instance where the coffin-bone has been pierced.

Lord Denman.—After the horse had been thus pricked, was he sound or unsound?

Mr. Turner.—Unsound, undoubtedly.

Charles Clark.—I am a veterinary surgeon. This must, at first, have been a slight case. After inflammation had proceeded some way, we could not tell how far the nail had penetrated. In such a case rest is the first requisite.

Charles Mavor.—I am a veterinary surgeon. The principal danger I should apprehend from a case of this kind would be that of lock-jaw. The bone might appear, after death, to have been injured, although it had not been punctured.

Lord Denman left it to the Jury to say, whether there was a warranty sufficient to cover this accident; and if so, whether there was any doubt that the horse was unsound at the time of the sale.

The Jury found a verdict for the defendant.

[We consider this to be a very important and a just decision. It meets the case which we have long wanted some one or other to take up,—the recklessness and cruelty with which the dealers' horses are hurried from the country fair to the metropolitan market. There was a great deal too much of this in the case of Sheward *v.* Witham, recorded in our last volume, p. 165. That, and that alone, lost the plaintiff his trial. The plaintiff was justly defeated on the same ground here. The horse was destroyed, not by any inflammation necessarily set up by the wound in the foot, but by the recklessness and cruelty—we cannot use better terms—with which he was goaded on by the plaintiff's servants in his journey to town. Two such lessons, and so rapidly succeeding to each other, will not, perhaps, be quite thrown away.

Mr. Provost, of Barnet, will, probably, on mature consideration, feel that he spoke a little unadvisedly, when, seeing the horse for the first time, only three hours before his death, he, if the newspaper report is true, says that "the nail had punctured the coffin-bone—death must have ensued from such a wound—it was mortal—treatment might have prolonged the life a little, but the wound was mortal: and the animal not exhibiting lameness for two or three days, would make no difference"!!—Y.]

Veterinary Students who have obtained their Diplomas.

January 18*th*, 1838.

Mr. George Wilkes, London;
Mr. George Godbould, Woodbridge.

February 8*th*, 1838.

Mr. Curtis Hutson, Spilsby, Lincoln;
Mr. Francis Hedley, Middleton-Tyas, York;
Mr. William Midgley, Sherriff-Hutton, York;
Mr. Henry Hutchinson, Wragby, Lincoln.

THE

VETERINARIAN.

VOL. XI, No. 124.] APRIL 1838. [New Series, No. 64.

THE COMPARATIVE EFFECT OF THE ACTUAL CAUTERY AND THE SETON.

By NIMROD.

[Continued from p. 121.]

I AM not surprised that Mr. Turner should be anxious, independently of party spirit, to place on record a detail of the advantages of a system which he has long pursued, not only boldly but successfully; and we have here a kind of summary of the effects of the general application of the actual cautery to horses' legs. Of this paper, my limits will not allow me to say more than that, in the space of half a page, he has condensed matter of fact in support of his own and his brother's peculiar practice, which it is not only difficult to gainsay, but which it would require the aid of fire itself to destroy. The astounding results, indeed, of his deep cautery lesions startle even myself, who have the highest opinion of his abilities, and a firm reliance on his veracity; neither do I dissent from the encomiums he considers himself entitled to bestow on the practice of himself and his brother. Still, with all my personal regard for these gentlemen—all my admiration of their talents—all my faith in their firing-irons—I should rejoice to see the time when still higher encomiums will be bestowed on the seton, because I believe it to be the least painful instrument of the two, and one more in accordance with the enlightened and, consequently, refined notions of mankind in general.

I could not fail being pleased with the candid statement of Mr. Holmes, who, willing to give credit to the seton, cannot go the length Mr. Richmond had gone in extending its use to osseous deposits, which are the evils chiefly to be combatted in the stables of sportsmen and coach-masters. His advice to the students of his profession is also creditable to his judgment, as well as to his independent feeling. Whilst he recommends them to pay due deference to their teachers, he wishes them to think

for themselves; and although he confesses himself unable to abandon the use of the firing-iron, he thanks Mr. Sewell for his perseverance in the use of the seton, giving it all the credit he considers to be its due.

I now touch on tender ground—on that occupied, in this debate, by yourself; and from your station, your science, and your experience, it may be called vantage ground. That the result of the last-named acquirement, on your part, is in favour of the cautery, is evident on your own shewing, and you succeed in clearly demonstrating your reasons for the choice. The stimulant to produce counter-irritation, say you, should not be brought into actual contact with the diseased part, which, as regards the legs, that produced by the seton must be. This objection is good, and obvious to the meanest capacities, amongst which, on these matters, may be reckoned my own: it would be adding fuel to fire, either in leg cases, or those of extensive and acute inflammatory disease. But although you advocate firing, and what may be termed severe firing, you do not admire the Messrs. Turner's deep cautery lesions; neither do I, to the extent inflicted on Paddy, the Surrey huntsman's horse. In fact, I freely declare I would rather shoot a horse than subject him to undergo such torture—admitting, at the same time, that such a resolve on my part detracts not from the value of the operation to those who are willing to avail themselves of it. I should be afraid to meet my good old horse in another world with the firing-iron in his paw, and being compelled to address him in the words of Nisus, in the Æneid,—

"Adsum qui feci, *in me convertite ferrum.*"

But, Sir, to be serious. I remember a remark that fell from you, some twelve or fourteen numbers back, that the practice of the veterinary art can only be securely and honourably based on science and *humanity;* and the seldomer we hear of, or see, merely to enable an animal to contribute to our pleasures, or even to our gains, lesions made in his limbs by hot irons, in which the finger of the operator can be buried—lesions, wounds that take seven long months to heal—the better will it be for the credit and character of the veterinary art. You ask the question, "Who gave us the right to inflict such horrible and protracted suffering?" I answer, "We have no such right; certainly not from the acknowledged supremacy of man." It seems to have been the intention of Providence, that the lower orders of animals should be subservient to the comfort, the convenience, and, also, to the pleasures of man; but his "dominion" extends no further; although, when exercised with humanity and justice, the

subjects of his power will be no less benefitted than himself, the relation between them being reciprocal. Both Heathens and Christians have read us excellent lessons on this subject, all tending to the same end. We should be neither indifferent to their sufferings, nor wantonly instrumental in producing them; but having been instrumental to them, we should be solicitous to mitigate pain, both in duration and degree, by the gentlest modes of inflicting it when necessary to produce a cure.

I am glad to find you hold to the opinion of the bandage. Take away that, and you would destroy much of the sportsman's faith in firing legs. This appears to me to be a natural result of lessening the external surface of the parts, accounted for even under the severity of the Messrs. Turner's irons. There is, as you say, a ridge of contracted integument as hard as any cartilage, but with none of its elasticity—not a temporary thing, but becoming tighter and harder by time.

April 25th.—We now enter upon the third and last discussion on the comparative merit and effect of the two important operations; and it is by no means the least interesting, forasmuch as it gives birth to questions and their answers respecting the *modus operandi* and its results, which are not only satisfactory to owners of studs, but also as affording an opportunity to Mr. Thomas Turner to soften down the picture he had, perhaps, coloured too highly, in the extraordinary case of the Surrey huntsman's horse. Mr. T. Turner likewise confirms, to a great degree, the opinion I had ventured to give as to the suffering of the horse under the operation of even *severe firing*, allowing the common acceptation of that term.

As regards the danger supposed to attend deep cautery lesions, it is satisfactory to hear it lightly treated by Messrs. Turner; and as it appears that a considerable number of horses of all descriptions are annually operated upon by them after the new system of firing, it is gratifying to find that Mr. Turner, senior, is about to publish a work which will enable others who may attempt to follow their example more generally than they now do, to take those measures of alleviating *after-suffering* which have succeeded so well—the remarkable fact having been stated, that not one horse, in a period of twenty years, has died from the consequences of the operation of deep cautery lesions. Whilst Mr. Thomas Turner admits the occasional advantage of the seton, his extensive practice in a hunting and coaching country has, it seems, convinced him that there are affections of the bones, the ligaments, and the thecæ of the tendons of horses' legs, for the relief of which the cautery alone, judiciously and severely employed, is the only certain remedy. His concluding

passage, stating how the operation is performed, together with its results, is given in strong, forcible language, carrying conviction, to a certain point, difficult to resist.

The President [p. 168] confirms the pretty general acknowledgment of the fact, that the absurd practice of firing colts, as a preventive of disease, is abandoned by the breeders of the North of England, to whom, to their discredit, had the practice been alone confined. He says, "God never made works for man to interfere with, to blemish, and destroy." Certainly not; although he does permit us to improve and beautify—witness the British race-horse, the Hereford or Durham ox, the new Leicester sheep, &c. Still it may be a doubt whether he intended the horse to be used as we use him—to travel at the rate of twelve miles in the hour on a hard road; at the rate of twenty over a soft country—clearing all the obstacles which oppose him; and to outstrip the wind over the course. It has been my lot to have had two horses whose limbs had been scored in their youth, the marks scarcely visible, and consequently of little avail.

Mr. Sibbald gives us two cases of setoning, both which proved failures, the disease afterwards yielding to the application of the actual cautery. Be it observed, however, that they had reference to diseases—curb and ossified cartilage—made exceptions by the President in his mode of treatment. Mr. Sibbald agrees with my opinion of the extent of torture inflicted by the usual method of firing—but going rather beyond me in asserting that it does not exceed that of a common blister, and, when compared with the seton, that it is mercy! His faith in the bandage is but weak, proving the truth of the adage of "who shall decide when doctors disagree?"

Mr. Sparrow places the merits of each operation in his scales, but gives the seton the preponderance. And taking the entire animal, no doubt he is right; because, for two parts to which the actual cautery can be applied, there are three or more in which the seton may be useful. This, however, shews what a benefit the profession has acquired by the united aid of both. The two cases, however, produced by Mr. Sparrow, as relieved by setoning, are not satisfactory, the *final* results being wanting. I have seen a hundred horses in my time sound at the end of a few weeks, after various remedial measures had been applied, but lame again after the first hard day's work.

Mr. Daws bears witness to the good effects of the seton in various parts of the body, and its total uselessness in others. He then specifies those diseases to which the cautery is the only sure remedy, and hence the necessity of the wide diffusion of veterinary knowledge. This gentleman appears to have been un-

successful in his attempts at the new method of employing the latter, death having ensued in two cases ; and hence the benefit likely to accrue from the promised publication of Mr. Turner respecting *after-treatment*. "I have rarely penetrated the skin," says Mr. Daws, "without having cause to repent it." No wonder, then, that he seeks for instruction in this appalling operation, and his appeal to the author of it is most creditable to him.

Mr. Beeson advocates the seton, in conjunction with blistering, and says he has not fired a horse for fourteen years, although he admits there might be cases in which firing would be useful. I should like to know amongst what description of horses the practice of Mr. Beeson lies, and also its extent, for the assertion is a startling one—a sort of clencher in favour of *steel*.

P. 171.—We now draw towards the conclusion of this highly important debate. We have Mr. Thomas Turner requesting the President to give "an explanation of the march of science as to the seton." The President, however, would fain have marched to his dinner ; but on the first prick of the spur he started on his course, and ran it honestly and stoutly from end to end. And the result? A detail of twenty-five years' successful practice of the seton, to the total abandonment of the firing-irons ; and also a condemnation, in which he tells us "some of his brethren joined him," of the Messrs. Turner's method of deep cautery lesions. In fact, when necessity calls for cutting down into newly formed osseous deposit, he does with his knife, by the simple operation of subcutaneous periosteotomy, what they do with the iron. He, however, qualifies the terms, "barbarous" and "cruel," as applied to deep firing, when considered to be actually necessary, associating the degree of suffering with that occasioned to the human frame in lithotomy and such-like operations ; but condemns nicking and cropping to the penalties of Martin's Act*. The President next takes a rapid sketch of the various parts and distinct diseases to which the rival operations are best adapted, clearly stating that the preference must be given to the seton in those of the hip, shoulder, stifle, knee, and hock. To the last named part, he says, the actual cautery has been oftener employed than to all the others, and with least success : and here, *bating curb*, I can agree with him on the result of my own experience. The seton, it appears, is in this case effective—a great point gained, if established ; and one which all sportsmen should be acquainted with, for no joint in the hunter is so frequently injured as that of the hock. In fact, I never went into my stable,

* When passing through the town of Lille, on my way to Brussels, last autumn twelve-months, I saw eight horses in a dealer's stables with their tails on the pullies, having nearly suffered amputation.

the day after having ridden a horse a severe run over a deep and strongly fenced country, that I did not look with apprehension for some damage to this part, and with good reason too. Setting fencing aside, look at the action of a horse over rough ground; it resembles that of a pointer in a turnip field,—a *succession of leaps*, and leaping, we know, is chiefly done by the exertion of the hinder legs of all quadrupeds. With the hunter, the stress on the hock joint must be prodigious, which in a great measure accounts for the well-known fact of some of the best leapers—of the best hunters, indeed,—having wretchedly bad fore legs. Be it known, then, that to this joint (with the exception of curb) the President declares—although his opinion is opposed by a great majority of his brethren—that the use of the seton has a decided advantage over the firing-iron.

Again, the President applies, with success, the seton to the knee—a part rarely fired, although very subject to contusions, and now and then to ligamentous injuries. I have had a good deal to do with contused knees, from the circumstance of my having, for many years of my life, been in the practice of "making hunters" of young horses, as the term is, and who would of course frequently hit their fences—timber especially—with their knees. I hated the sight of banged knees, and for this reason. Beyond fomentation and repellents, I knew no way of treating them in the hunting season; and as they seldom occasioned lameness, it did not answer to stop horses in their work on their account. As for looking into books for advice, that was a useless task. No wonder, then, that I hated the sight of a banged or contused knee on a promising young hunter, arising from the difficulty I found in reducing the swelling occasioned by the blow. I used to blister in the summer mildly and repeatedly, but generally to small account*. May I ask, then, does the President find us a certain remedy here? for, if he does, the fact should be made known. And may the same assurance be given respecting blows on the cap of the hock?—for what an eye-sore is what is called a "capped hock," which a trifling blow against a stall-post will occasion? As for attempting to reduce it by medicinal applications, you may as well employ them against a mountain.

"To sprains" the President says (page 171), "from every cause, and in every part, the firing had been applied with doubtful success, or with no success at all, both in the superficial and the severe way. To ossifications on the legs, splents from con-

* After I became acquainted with the mercurial charge, I saw a contused knee very considerably reduced by it, in the case of a neighbour's horse, who applied it at my suggestion. It was not, however, a case of long standing.

tusions or any other cause, the actual cautery and blisters had been applied, and, up to this very day, without any decided success; but they often immediately yield to the new operation which he had had the honour to introduce." This is not saying much: the terms "without any *decided* success," in one case, and "*often*" in the other, pretty nearly balance the account. He next proceeds to the fetlock, which he properly describes as a complicated joint in itself and its various connexions. He assures us that, here, both the blister and the cautery have often been employed in vain, which I believe to be too true, and I always dreaded a fetlock lameness: "but," says the President, "the seton and the subcutaneous periosteotomy had performed cures without the severity and suffering inflicted by the cautery; indeed, without any suffering at all!"

The President next contrasts the relative danger of the two opeations of fire and steel. Death, says he, has been caused by both superficial and by deep firing, and likewise by the blister, but he challenges the profession to produce one fatal instance from setoning. His remark on Germany and France is correct. They fire their horses a great deal in both countries—in parallel lines, on the extremities; and seton much, as I have already said, for all visceral diseases, the favourite part being the gaskin.

Mr. Sewell now appeals to sportsmen as to the efficacy of firing their hunters; and I take leave to comment on one passage in this paragraph. "I particularly applied," he says, "to one gentleman whose opinion has great weight in the sporting world, who acknowledged that it used to be the practice to fire the weakly colt, and the hunter, at the close of the season, in order to refresh his legs. He had done it, but he never knew any benefit to accrue from it." Now, the reply of this sportsman perplexes me. Had the question been put to me, I should have answered it thus:—"the practice of firing the weakly colt has long been discontinued by Yorkshire breeders, but it never was a custom, generally, among sportsmen; and it was their practice to *blister* not to *fire* their hunter's legs at the conclusion of a season, in order to "refresh" them; but that practice is now very much diminished, and I have reason to believe that I contributed greatly to write it down. If decided symptoms of mischief to sinews, &c. appear, either the mercurial charge or the cautery is resorted to, as the severity of the case may require; and which will continue to be their practice, unless you, Sir, can convince them, that the milder and less painful operation of the seton will have the desired effect." Mr. S. concludes with the bold assertion, that with the exception of curb and ring-

bone (the latter doubtful), in every case in which the cautery is used, the seton would be equally or more effectual in its results. In injuries and sprains of the suspensory ligaments [hear this, trainers of race-horses!] he gives it a decided preference; and vouches for its efficacy in opened joints, and where, afterwards, the joint had lost much of its suppleness; and in the thecæ of the legs, after inflammation is allayed. In fact, for the space of twenty-five years he has abandoned the cautery; and he disclaims having heard any thing to induce him to return to it in the arguments of its most earnest supporters. On hearing this, I am disposed to exclaim—*Floreat seta!*

A few questions and answers—and these of a simple but decisive nature—terminate the discussion on these interesting subjects. Mr. Turner asks the President whether he had ever practised deep firing on any part? He answers in the affirmative. "I have," he says, "*put the cautery lesions fairly to the test.*" He is again asked by Mr. Turner, whether he had performed it within the last ten years? He does not answer this question direct, but assures his audience that the periosteotomy knife will do all that is required to be done, and that he should not fear beginning the world again, and limiting his practice to this particular line. As to his recommendation to the students to ask the opinion of a surgeon as to what *he* thought of firing, as "a usual surgical measure," I think that is irrelevant to the subject before us; forasmuch as, from the peculiar sensitiveness of the human frame, it is a means of cure which would not be endured, except in extreme cases, such as the bite of a rabid animal; although I doubt not its efficacy in many, which we may infer from the service rendered by the caustic, which, with its brother *corrosive,* is termed "artificial fire." On being pressed by Mr. Turner—*another prick of the spur!*—the President does not pronounce the seton infallible; and the debate concludes with an assurance from Mr. Thomas Turner—backing that of his brother—that, in the hundreds and thousands of cases of deep firing in their practice, he had not to record one case of death, or of any great casualty. A staggering affirmation this; but where is the man to disprove it?

I have only now to offer a few concluding observations on the statements which I have already commented upon. Here are the leading members of a most useful and an honourable profession, with a professor of their art at their head, contending for the individual fame of two of the most important therapeutic agents in all veterinary surgery; and according to the evidence produced, the merits of one are declared not generally equal to those of the other, although the suffering to the patient is said to be less. I

speak now of the majority of the evidence being against the use of the seton, taking the generality of diseases to which hard-working horses are liable; although it is admitted, by all parties, that in particular ones it is the best. The chief object to be attained then appears to be, a knowledge of when the one and when the other is good; and as it is unanimously agreed that the seton is good in early stages of spavin, thorough-pin, joint capsular lameness, recent strains of shoulder, hip, elbow, or stifle; in cases of poll-evil and fistulous withers, and in all injuries beyond the reach of manual detection, the voice of humanity calls for the adoption of it in all such cases, as the least painful remedy of the two: whilst in desperate leg cases, or "sinew cases" as grooms call them, the iron must remain the remedy, until it is proved that the seton will do as much. It will not do to talk of trying one remedy first, and, if that does not succeed, having recourse to the other; for the saving of time is material as regards so expensive an animal as the horse. That both operations are painful there cannot be a doubt; and as it is, to use your own words, "a noble animal we are torturing," we should, when we can avail ourselves of it, adopt the one which is the least so, provided it be effectual. Nevertheless, it will not do, as the President himself observes, to decry a practice merely because it gives pain; neither must the nerves of a veterinary surgeon be too sensitively constituted—nor, indeed, should any person whatever indulge in a morbid sensibility which might interfere with the common duties of life. It will not do to be sighing

> "For the kid or lamb that pours its life
> Beneath the bloody knife."

The subject of this debate, however, cannot well be too often discussed; and *facts*, which are the materials of science, should be produced, from the experience of the profession generally, in favour of or against the adoption of the new system. To mortify the pride of man philosophy leaves many things unexplained; still be it remembered, that in her school the detection of a single error concerning one branch of natural science, justifies the suspicion of its existence in another.

P.S.—Although a little in advance of my present subject, I cannot lose sight of a letter in the Number for June last, bearing the signature of Mr. Pottie, of Yoker, near Glasgow, which is to be admired as much for the epigrammatic style in which it is written, as for the value of its practical remarks. Mr. Pottie upholds me in my view of the difference in the practice of a *West End London* and a *country* practitioner of the veterinary art. The

seton, says Mr. P., may serve Mr. Sewell, whose patients are all of one kind, and the property of wealthy individuals, to whom time is not an object; whereas his are hard-working coach and canal horses, who are often kept at work long after the lameness is evident. In fact, his practice lies amongst diseases and aggravated lamenesses, which Mr. Sewell, he thinks, seldom sees. For such, then, he denies the power of the seton to produce the amount of irritation sufficient to effect a cure. As regards the pain from firing, this gentleman argues properly by putting the following question :—" Which is worse," (says he) " the pain of curing, or the pain of working uncured?" and the work of canal horses, within his practice, is no joke, the pace being, in the passage boats, nine and a half miles in the hour, as I can testify from experience. On the probability of accidents from casting horses to seton their legs, which is seldom necessary in firing, the observation of Mr. Pottie is worth notice; and, on the whole, the result of his own " stirring practice" is in favour of the irons.

REMARKS ON PARACENTESIS THORACIS, WITH SUCCESSFUL CASES.

To the Editors of " The Veterinarian," London.

Piershill Barracks, Edinburgh, Mar. 8, 1838.

Sir,—I beg leave to send you the following remarks and cases, and request that you will do me the favour to insert them in your valuable Journal at your earliest convenience.

I am, Sir, your obedient servant,

Alex. Black, V.S. 14th Light Dragoons.

It is well known that inflammation of the lungs and their investing membranes is one of the most common diseases incident to horses, and that effusion into the cavity of the thorax is a very frequent consequence of that affection. For the purpose of freeing the chest from the effused fluid, various means have been tried, and among others the operation of *paracentesis thoracis.* In medical practice, this had been had recourse to for a very long period before it was thought of being attempted in veterinary surgery; and the small success which attended its application to the human subject afforded but little encouragement to those who were bold enough to try it.

On its first introduction into veterinary surgery, the unsuccessful cases so far outnumbered the successful, that more cautious veterinarians were inclined to abandon it altogether. No doubt cases will occur, in which the most judicious treatment will be of no avail. But I cannot help attributing many of the unsuccessful cases of *paracentesis thoracis* which I have read and witnessed to the operation having been too long delayed, or to neglecting or not pushing to a sufficient length the tonic plan of treatment. In ordinary cases, by performing the operation early, and supporting the strength of the patient, its chance of success might be tenfold increased. I speak advisedly; and having been upwards of twenty-four years in regimental practice, I have had ample opportunity of forming my opinion from observation and experience.

With the view of recommending the operation to those whom the many failures of it may have rendered sceptical of its merits, I beg leave to detail the following cases :—

CASE I.

1826, *August 9th.*—A bay troop mare, six years old and in high condition, was attacked with inflammation of the lungs, accompanied with great rapidity of pulse and respiration. Eight quarts of blood were immediately abstracted, and a bolus consisting of three drachms of Cape aloes, half an ounce of the nitrate of potass, and one drachm of tartarized antimony, was exhibited. Three hours after the bleeding respiration became more natural.

10th.—The pulse is 70, and oppressed; respiration as hurried as when first seen, and the extremities cold. Five quarts of blood were withdrawn, and a drachm of tartarized antimony, with half a drachm of digitalis, and two drachms of the nitrate of potass were directed to be given three times a day. The sides and chest were blistered, and the legs bandaged. On visiting her an hour after the bleeding, she appeared to be better, and the breathing was more natural.

11th.—The pulse is quick and indistinct, but the breathing natural. She has eaten a little grass. The medicine was ordered to be repeated, as well as the blisters to the sides and chest, and the legs to be kept warm with hand-rubbing and bandaging.

12th.—She has eaten two or three pounds of grass. The symptoms remaining much the same as yesterday, the medicine was continued.

13th, 14th, and *15th.*—The pulse fell to 46, and she continued to improve and feed tolerably well on bran and grass. Three drachms of cascarilla powder, with two drachms of nitrate of

potass, were exhibited three times a day, instead of the medicine formerly given.

16*th* and 17*th*.—She has become much worse; looks very dull, holds her head down, and eats little or nothing. The pulse is 60, and the respiration very hurried. Half a drachm of digitalis, three drachms of cascarilla bark, and two drachms of the nitrate of potass were ordered to be given three times a day.

18*th*.—Having fully satisfied myself that effusion to a great extent had taken place within the *thorax*, and that nothing but *paracentesis* would be useful, I proceeded to operate in the following manner:—Drawing back the integuments, I made a small incision through them with a lancet, and introduced a trocar and canula between the eighth and ninth ribs of the right side, nearly as low down as their cartilages, and on withdrawing the trocar from the tube, seven quarts of fluid came away in a full stream. Care was taken to prevent the entrance of air. As soon as the fluid had been abstracted, I withdrew the tube, drawing the integuments over the opening, and then operated in a similar manner on the left side. Scarcely half a pint of fluid, however, came away. About an hour after the operation she breathed naturally, appeared much better, and ate a feed of bran and oats, and a fair allowance of grass. She was ordered three drachms of cascarilla bark and two drachms of the nitrate of potass, three times a day.

19*th*, 20*th*, and 21*st*.—She continues to feed well, and is, on the whole, better. The medicine was continued.

22*d*.—She is much worse; her appetite is lost, and the respiration very rapid. I operated, as before, on the right side, and evacuated five pints of fluid. In half an hour she appeared to be greatly relieved. In the course of the day she began to feed on bran and oats, and took a good allowance of grass. A liquid blister was rubbed into the sides and chest, and the tonic medicine mentioned above was continued.

23*d*.—She is much better, the breathing is free, and she feeds well. The tonic medicine was continued.

September 15*th*.—She has continued to improve and feed well, and the tonic has been regularly exhibited, as directed above; and she has half an hour's exercise daily. The medicine was now ordered to be given only night and morning.

October 8*th*.—The medicine was discontinued.

12*th*.—She has lain down for the first time.

23*d*.—She now lies down frequently for an hour or two, and has walking exercise for an hour and a half daily.

November 4*th*.—Being now perfectly recovered, she returned to her duty.

After this she did duty in the regiment, and was in perfect health for eight years, during the greater part of which she was ridden by a serjeant.

CASE II.

1837. *June* 1*st.*—A bay troop horse, seven years old, and in good condition, was attacked with inflammation of the lungs. The pulse was 69, and the breathing quick. Six quarts of blood were abstracted, and a bolus, consisting of two drachms of Cape aloes and half an ounce of the nitrate of potass, was exhibited.

2*d.*—He appears to be no better, and the pulse is oppressed and irregular. I took away five quarts of blood, inserted a rowel in the chest, and blistered both it and the sides. I also ordered a drachm of tartar emetic, two drachms of the nitrate of potass, and half a drachm of digitalis, to be given three times a day.

3*d* and 4*th.*—He is a little better, and the respiration is more tranquil. The medicine was directed to be repeated.

5*th*, 6*th*, and 7*th*. The pulse is 48, the breathing is natural, and he eats grass and bran mashes. The medicine was repeated as before.

8*th.*—He is not so well; the pulse and breathing are more rapid, and he does not feed so well. Being afraid, from symptoms which it is unnecessary to mention, that the affection would terminate in hydrothorax, I gave night and morning half an ounce of the nitrate of potass, besides a drachm of gentian, two drachms of cascarilla bark, a drachm of capsicum, and a drachm of ginger, three times a day, as a tonic.

9*th.*—He was no better, and the medicines were ordered to be continued.

10*th.*—The pulse was 70, the breathing rapid, and the appetite gone. From a variety of symptoms, I was induced to conclude that effusion into the thorax had taken place. I therefore operated in the same manner as I stated in the case detailed above, and withdrew in a full stream from the right side five quarts of fluid, while I obtained only about a wineglass-full from the left. I directed a drachm of gentian, a drachm of ginger, and the same quantity of capsicum, with two drachms of cascarilla bark, to be given every four hours; and half an ounce of the nitrate of potass night and morning. About half an hour after the operation, he appeared to be much better, and began to feed.

11*th.*—He is much better, and the breathing is free. The medicines were ordered to be continued as before.

30th.—The tonic medicine has been continued every four hours since the 11th.

From the 30th of June till the 12th July the tonic was exhibited night and morning, and he was exercised for half an hour daily. On the 4th of August he went to his duty, and up to the present date has been free from any complaint.

CASE III.

July 19th, 1837.—A black troop horse, five years old, was seized with inflammation of the lungs. The pulse was 68, and very much oppressed, and there was great difficulty of breathing. Seven quarts of blood were abstracted, and two drachms and a half of Cape aloes, with two drachms of tartar emetic, exhibited.

20th.—The symptoms continuing much the same as yesterday, four quarts of blood were withdrawn, the chest and sides blistered, and half a drachm of digitalis, a drachm of tartar emetic, and two drachms of the nitrate of potass ordered to be given three times a day.

21st.—There being no improvement, and the pulse being quick and oppressed, the blisters and medicines were repeated.

22d and 23d.—The respiration is more natural, though the pulse is still very rapid. He has taken a little grass. A drachm of digitalis, the same quantity of tartar emetic, and two drachms of nitrate of potass were ordered to be given four times a day, instead of the former medicine, and he was directed to have bran mashes.

24th and 25th.—He eats more grass, but refuses to take the bran mashes. The medicine was continued.

26th, 27th, 28th, and 29th.—He has taken some grass, and a little dry bran and oats mixed; but his appetite is bad, and he is very weak. I therefore discontinued the medicine formerly prescribed, and substituted for it a tonic, consisting of a drachm of gentian, a drachm of capsicum, the same quantity of ginger, and two drachms of cascarilla bark, to be given three times a day, with three drachms of the nitrate of potass night and morning.

30th.—He is worse. The pulse is 70, the respiration hurried, and the appetite gone. All the symptoms of hydrothorax appeared, and I acccordingly operated as in the two previous cases, and drew eighteen quarts of fluid from the right side, and seven from the left. In two hours he was much improved, and ate a full allowance of bran and oats. The tonic last mentioned was

now ordered to be given every four hours, and two drachms of nitrate of potass night and morning.

The medicine was continued every four hours until the 18th of August. No difficulty of breathing occurred, and he went on improving in every respect. At the date just mentioned, I turned him out to grass for three or four hours daily, and continued the medicine three times a day till the 30th of August, and for a week afterwards only once a day.

On the 24th October he returned to his duty, and has been in perfect health ever since.

I attribute my success in the three cases which I have just detailed to the early performance of the operation, and the liberal use of tonics, which while they invigorated the system had no tendency to hurry the circulation. These, it will be observed, were exhibited both before and after the operation; and I cannot too strongly impress upon my brethren the propriety of following the same course. In most of my unsuccessful cases, dissection shewed that the lungs and pleura were so much diseased that recovery was impossible. In other cases, however, I must attribute my want of success to my not exhibiting the tonic medicine as I have just recommended. By strengthening the system in general, we give tone to the part which the previous inflammation had weakened; and when the fluid is drawn off, there is much less risk of its again collecting. An unsuccessful case, in consequence of not exhibiting tonics, occurred to me three years ago. A valuable horse belonging to my commanding officer, Colonel Townsend, which had always previously enjoyed excellent health, was attacked with inflammation of the lungs. He was only bled once, and the disease terminated in hydrothorax. I operated on him three times on both sides. Fifteen quarts were abstracted the first time, eight the second, and two the last. He survived the first operation thirty days. A review of the whole case, coupled with the appearances presented after death, has convinced me that an early and steady exhibition of tonics would, in all probability, have saved him.

[We regard these as exceedingly valuable cases, and thank Mr. Black for them. With his opinion on the advantage of the early performance of the operation, and the efficacy of tonics, we cordially agree.—Y.]

THE BREEDING OF HORSES, CATTLE, &c. IN RUSSIA AND POLAND.

In the two countries in which these avocations constitute the principal profit and income of the great proprietors a vast court is always attached to their houses, divided into four parts, and surrounded by stables. The horses are classed in these buildings in the order of their worth or destination. At each of the angles of this court is a passage leading to beautiful and extensive pasture grounds, divided into equal compartments, and all of them having convenient sheds under which the horses may shelter themselves from the rain or the sun. These are the seignorial studs, whence are derived the remounts of the principal houses in Germany, and by which the great fairs in the different states of the German Empire are supplied.

The breeding of cattle is also zealously and profitably pursued. The cow-houses form the greater portion of the other buildings attached to the mansion. The largest of these is destined for the milch-cows, and a capacious square building serves for the milking-house. These dairies are disposed and fitted up like those in Switzerland. In the middle is a jet of water; slabs or tables of marble occupy every side, and a slight inclination of the floor permits the observance of the greatest possible cleanliness. An upper story serves for the manufacture of different kinds of cheese, that are made in imitation of, and sometimes equal, those which are most esteemed in Europe.

There is a third space or court, enclosed with walls, and with little buildings protected by iron bars. This is destined to be a menagerie for bears of the rarest and the most beautiful colours and yielding the choicest furs. This speculation is a very profitable one. A cub of six months old, with black hair pointed with silver-white, yields a very light skin and fur, and which will obtain a considerable price, especially if there are others of the same variegated colour and fineness sufficient to make a pelisse. A garment of this kind will sometimes be sold for £600 or £1000. The skins of the old bears are employed for the carpets or linings of carriages, or the most supple of them form the clothing of the coachmen.

Some of the courts are well filled with poultry divided agreeably to their respective breeds.

In the habitations of the peasants one half of the cabin serves for the family, and the other the cattle, which ordinarily consist of a cow and a small horse.

Journal des Haras.

ON LAMENESS IN THE HOCK JOINT, IN REPLY TO MR. W. C. SPOONER.

By Professor Dick.

I was so much engaged last month with the important affairs which a new year brings about, that I had no time to devote to Mr. Spooner. But now, when I have leisure to peruse his longer reply to my "very lengthy paper," I have been reminded of a story which is told of an Irish drummer, who was flogging a countryman for having deserted. "Och! (said the criminal) hit a little higher up; Och! a little lower down; Och! hit here: hit there." "Botheration to ye (said the drummer), I cannot plase ye, *hit* however I will." Mr. Spooner first complained of nobody discussing the subject which he had brought before the profession; and now he complains of its being discussed at too great length: next, that my paper has the "appearance of ill-humour;" and then he cannot "admire my good taste." In short, I may say to Mr. Spooner, like the drummer, Botheration to ye, I cannot plase ye, *write* however I will. But to be serious: I think few will accuse me of spinning a long yarn; and as in the present discussion none of your readers have complained of the length of my papers, Mr. Spooner might have allowed me to escape the accusation. As to the appearance of ill-humour, I have looked over my last paper, but cannot discover from what he draws his inference; and I do not recollect of any such feeling being excited during my writing. As to my "good taste" in writing, I cannot expect to meet the approbation of all; and although disappointed with the loss of Mr. Spooner as an admirer in that respect, I must console myself with the reflection, that there is no accounting for taste.

I have endeavoured to state my views as plainly and clearly as I could; and in using the word self-assurance, while I wished to call every thing by its right name, I had no intention to employ the term offensively. *Obstinacy* and *ignorance* are not my words; but Mr. Spooner having asserted that he had discovered the seat and nature of "Obscure Hock Lameness," and having pointed out certain appearances in the hock as such, and I having not only denied what he pointed out to be disease, and demanded his proof, but having offered some remarks and proof in support of my opinion, I cannot help the inference that may be drawn, so long as Mr. Spooner withholds the *proof*, and yet continues the *assertion*.

I have denied in toto, and continue to deny, that those appearances which Mr. Spooner has pointed out in one and all of the

cases, are the effects of disease; and have done so, because he called on the profession either to *admit* or *deny* his statements and views. I have denied, and he is bound to prove his assertion. That is the state of the question; and it is no use for Mr. Spooner to attempt to escape from his position. It matters not upon what grounds I have done so; he is bound to prove his right. But if he *wishes to know*, I can tell Mr. Spooner that I *have* satisfied myself that what he describes as abrasions "*are exactly alike and in every respect the same*" as my oil cisterns, and that there is "no mistake" about the *likeness;* the only difference, then, between us is as to the *nature* of the thing.

Your readers will recollect that I have stated that these *sulci* are to be found, in one *form* or *another*, in all true joints. I have mentioned grooves and indentations as illustrations; and Mr. Spooner puts in italics, that I have concluded that *these* "are *exactly alike* and in *every respect the same.*" He wishes to be very witty upon this point, and amazingly logical. "Does it not," says he, "strike the clear-headed reader, that, before Mr. Dick takes upon himself to make the many flat contradictions contained in his first paper, he should have BETTER satisfied himself and *his readers* that we were both arguing upon the same thing?" Now, my dear Sir, I am *perfectly satisfied*, and I have little doubt that most of your readers are perfectly satisfied, that we are arguing about the same kind of thing; and I am somewhat inclined to think, that Mr. Spooner must be almost, if not altogether, satisfied on the subject ere now. But lest there should be any mistake, and as some of your readers are inferred *not* to be "clear-headed," (as Mr. Spooner appeals to the clear-headed class) perhaps it may be necessary for me to be even more explicit in my denial of the correctness of Mr. Spooner's views than I have yet been. He seems not to understand that muddy-headed readers, like myself, require him to prove that he is right; and if he does so, it will then be evident to the clear heads that I am wrong. But I again assert, that Mr. Spooner has given such an accurate account and description of the best-formed joints with the synovial cisterns in them, that even a muddy-headed reader cannot have any difficulty in understanding him. But, then, Mr. Spooner says I jump to my conclusions, because I, being muddy-headed, have supposed he has examined no others: but I do this because he says, "Have I gone to the knackers or the kennel, and searched for hocks supposed to be diseased, and then concluded, as a matter of course, that the horses to which they belonged must have been lame? No! I have related no case—I possess no specimen of the disease whose previous history I have been unacquainted with." Where in this does he tell us

that he has examined any other hock? But because I have not *supposed* that he had done so, he says I have jumped to my conclusions; in short, he *supposes* me a real "Jim Crow;" the only thing wanting to complete the picture being the movements of the *singer*, with his "Turn about, wheel about, jump Jim Crow."

I must now, however, be serious. It was very ridiculous in me to suppose Mr. Spooner had examined no hocks but the few he has given a description of; but, then, I might have got a hint about the number, for he has "examined *nearly* every one that" he has had an *opportunity* of examining. Now, *how many* has Mr. Spooner examined since I stated that I considered he was wrong? It may be one, or it may be none, for aught he states. Next, he says, "it is jumping to a conclusion with a vengeance to suppose, much more to assert, that a person must be ignorant of every thing that he does not state in print." I think Mr. Spooner has mistaken me on this point, because I have not complained against his not stating all he knows, but the reverse. However, it appears he had not stated all he knows; for it now comes out, that he has in many instances found a slight excavation in the groove of the astragalus, and, though less frequently, on the ridge of the tibia, and that he had no reason to consider that these caused lameness prior to death. But then, he says they presented no *discolouration*—they were simple indentations, which he never stated would necessarily produce lameness; and he will allow nobody to make such an assertion for him, and I am sure he cannot accuse me of doing so. But, besides the discolouration, we have the difference in size between the "*indentations*" and "*abrasions*," so that, as they differ in *size* and *colour*, they cannot be the same *kind of thing*. For example: as Mr. Spooner speaks of logic and horses, we may say, speaking logically, that as a small Shetland *pony* of a "*cream colour*" is not a large "dark bay" London dray *horse*, therefore he cannot be a *horse*. And upon the same principle, as these indentations differ in *use* and *colour*, they cannot be *things of the same kind!!*

It appears, now, that Mr. Spooner has let the cat out of the bag, and that he has seen them; that he has "*been rather inclined to believe that these indentations* (sulci) *were of a normal character; but then, be it remembered, they differ*"—*in colour*. Did you ever read the story of the chamelion? I think most boys have done so when at school; and, if I recollect rightly, there was a very warm discussion amongst the disputants about its *colour*. Now, is it possible that another chamelion is under discussion? what, if the particular state of the animal prior to death, or the particular cause of death, should influence the

colour of these and other parts? These are hints which, if required, I will fill up.

In respect *to the fine-spun theory*, I simply beg to protest, that Mr. Spooner has not proved that similar changes take place here as in navicular lameness: there is, therefore, still the theory without the facts to rest upon; it is not enough to say they are *similar in appearance.* "The Authorities" will not allow that these sulci "are instances of *abrasion* and absorption of substance:" Mr. Spooner is bound to *prove it.*

Mr. Spooner has accounted for his not quoting correctly, but he has *not* answered my questions as to his proof that the lameness did *not* arise from inflammation in the bones which produced the slight exostosis: he has given his opinion, but I have taken leave to differ from him, and expect explicit answers and proof that he is right. I alluded to the plate with the astragalus and calcis connected together in reference to the alleged minuteness of Mr. Spooner's examination; and whether in the one case, or in the other, does not alter the position of the argument, because if, as Mr. Spooner contends, ulceration takes place in the form he represents in one joint, why not in another; and he was bound to have examined the articulations between those bones before he could demonstrate that there was no disease there, and be entitled to take "his degrees as Professor of Logic." Mr. Spooner attempts to make it appear that his first description of his case, in 1830, conveys the idea of the ridge of the tibia being *worn down;* but in my humble opinion it is as logical to suppose that the cartilage had never been there, as to suppose that it had been removed. Mr. Spooner gives us another specimen of his logic, by comparing my inference in regard to there being no appearance of friction on the astragalus, and that as there was none, there could therefore be none on the tibia, to be somewhat like Tenterden steeple being the cause of Goodwin Sands. Now, I would simply ask Mr. Spooner, if he believes that the articular surface of the tibia could be so rubbed on the articular surface of the astragalus, as to produce the appearance of friction on the one and not on the other? For my own part, I think that, if the head of Tenterden steeple had been rubbed against any other head, they might, if they had been large enough, and of proper materials, have been the cause of Goodwin Sands, notwithstanding Mr. Spooner's far-fetched simile. "But if (ah! that little word *if*) Mr. Dick is altogether wrong in his persuasions with regard to this case, is it not likely that he is equally erroneous in his ideas of the other cases that I have described?" Really, this is perfect trifling. If Mr. Dick is wrong, why does Mr. Spooner not prove it? has he

done so, or has he proved that he is himself right,—let your readers judge. But to come to the point: although I am not bound to prove a negative, I may state that, within the last three weeks, I have had five hind legs on the table in my lecture room, in each of the hocks of which I have found sulci as extensive as those represented by Mr. Spooner; and, to save time and discussion, and to shew Mr. Spooner that what he represents as the cause of "obscure hock lameness" is to be found, as I have stated, in other joints, and those, too, which are not so subject to disease as the hock, and that these may exist even to three times the size, and present what he calls discolouration to the same extent, I will send you, by an early opportunity, the elbow joints of a horse, which I have known for five years, and which was never lame, that you may convey them to Mr. Spooner for his inspection; and I would refer him generally to the elbow joints of any horse, when he is at a loss for a specimen to shew what he considers the cause of obscure lameness. But before leaving this paragraph, I must notice the last three words, "most certainly wrong:" will Mr. Spooner acknowledge that he is "most certainly *wrong*" if I send him specimens exactly alike, and in every respect the same as those he is so tenacious about? If he will say so, I will send them to you; and I care not who compares the specimens. If I fail, I shall then be "most certainly wrong."

I pass the next paragraph, by requesting Mr. Spooner to read again the one in my last letter it refers to; and when he has maturely considered the subject, and has finished this, we shall then be ready to discuss the liabilities of particular parts to disease, and the provision of Nature to support such parts.

As to my allusion to lectures, Mr. Spooner will excuse me for reminding him that I was only putting myself right and correcting his erroneous statement. Other lecturers, I have no doubt, would be able to answer for themselves, as I have done.

Again, as to Mr. Spooner's knowledge of friction, I repeat my belief that he had never seen a case; and I ask, if he has yet been to see the one in Mr. Liston's museum?

I did not observe until I turned over the last leaf of Mr. Spooner's paper, that he intended taking his leave of the discussion; but if he does so, whatever he may profess of good humour, it appears to be presuming too much, when, *perhaps*, he has been demonstrated to have been "most certainly wrong," to complain of cold-hearted cynical distrust and criticism, because it has not been allowed that he was most certainly *right*.

LECTURE ON THE CREATION AND GEOGRAPHICAL DISTRIBUTION OF ANIMALS.

DELIVERED BEFORE THE TRURO SCIENTIFIC INSTITUTION.

By Mr. W. F. Karkeek, *Truro, Cornwall.*

I know not any branch of science more interesting to mankind in general, including all ages and descriptions, than the history of living beings, or, as we commonly call it, the natural history of animals. This pleasing subject occupies us at the first dawn of reason, amusing our earliest infancy, and supplies a fund of solid instruction and rational entertainment to our riper years and more developed faculties. In its boundless extent and variety are included matters within the comprehension of the least cultivated understanding; and others, to which the strongest mind and most enlarged science are not more than adequate.

The wisdom and power of the Almighty are most wonderfully displayed in the infinite diversity of the forms and organs of animals; the nice adaptation of these to their several functions; the beauty and elegance of some, and the extraordinary formation of others; the variety of their motion, their geographical distribution, and their pre-eminent utility to mankind in every state and stage of life. And when we reflect on and endeavour to estimate their countless numbers, and further consider the manifold attributes and characteristics of those only which are familiar to us, we cannot but wonder at and reverence their great Creator. He made "every living thing after its kind," formed it with organs and senses peculiarly adapted to its natal station, and for its destined purpose endowed it with instincts and faculties to obtain its own subsistence, to guard its life, and to perpetuate its species. The more we study their forms and structures, we shall discover that, from the monstrous leviathan of the deep to the smallest insect that lives in the waters—from the unwieldy but sagacious elephant to the more minute animal that moves on the earth—there are regular and systematic gradations—there are uniformity, harmony, and infinite design.

"These are thy glorious works, Parent of good!
Almighty! thine this universal frame,
Thus wond'rous fair; thyself how wond'rous then!
Unspeakable, who sitt'st above these heavens,
To us invisibly, or dimly seen
In these thy lowest works.—Yet, these declare
Thy goodness beyond thought, and power divine."

"The history* of the animal kingdom naturally commences

* Kirby's Bridgewater Treatise.

with the creation of animals, and the great events preparatory to it; for when the Almighty Creator, in his wisdom and by the word of his power, had first brought into being and afterwards set in order the heavens and the earth—had caused the latter to bring forth grass, and herb, and tree—when all things were thus prepared, his next care was to people and enliven the earth with a different and higher class of beings, in whom to organization and life and growth and reproductive powers might be added sensation and voluntary motion. Unpeopled by animals, the verdant earth in all its primitive and untarnished beauty, though inlaid with flowers exhibiting in more or less variety every mixture and shade and colour that can glad the sight, would be a dull monotonous scene without the breath of life. No motions would be seen but of the passing clouds, of the fluctuating waters, and the waving boughs; no voice heard but of the elements."

But it was not the will of the beneficent Creator to leave such a blank and blot in his creation. He said—

> "Let th' earth bring forth soul living in her kind,
> Cattle and creeping things, and beast of th' earth,
> Each in their kind. The earth obeyed, and straight
> Opening her fertile womb, teem'd at a birth
> Innumerous living creatures, perfect forms,
> Limb'd and full grown."

What was the precise order of creation in the animal kingdom is nowhere clearly revealed; and we can only conjecture, since the most perfect animal, man, was created the last, that the progress was from those that were at the foot of the scale to those that were at the summit. This opinion is confirmed by geological researches into the different strata of the earth. When the earth was completely furnished, and ready to receive her destined king and master, the word of power was spoken—

> "Let us make man in our image,—man
> In our similitude; and let them rule
> Over the fish and fowl of sea and air,
> Beast of the field, and over all the earth,
> And every creeping thing that creeps the ground."

And now the generations of the world were perfect and healthful, and "God saw every thing that he had made, and behold it was very good."

We are informed in the sacred writings that the present structure of the earth's surface was formerly covered to a certain depth with water, which gradually lessened from causes unknown to us, so that various spots became dry and habitable.

"Over all the face of earth
Main ocean flow'd, not idle, but with warm
Prolific humour soft'ning all her globe,
Fermented the great mother to conceive,
Satiate with genial moisture, when God said,
'Be gathered now ye waters under heaven
Into one place, and let dry land appear.'
Immediately the mountains huge appear
Emergent, and their broad bare backs upheave
Into the clouds, their tops ascend the sky;
So high as heav'd the tumid hills, so low
Down sunk a hollow bottom broad and deep,
Capacious bed of waters."

It is not necessary, in a lecture like this, to discuss the different hypotheses, how or in what manner the waters were gathered together, as it is, I believe, the general opinion of geologists, that the present appearance of the earth's surface confirms the Mosaic description. The highest dry surface on the globe must, therefore, have been the earliest inhabited; and here Nature, or rather her Creator, would have planted the first people, whose multiplication and extension must have followed the continual decrease of the water.

We may fancy to ourselves this first tribe, endowed with all human faculties,

"God-like, erect, with native honour clad,
In naked majesty seem'd lords of all;
And worthy seem'd, for in their looks divine
The image of their glorious Maker shone;"

but not possessing all knowledge and experience, the subsequent acquisition of which is left to the natural operation of time and circumstances. As Nature would not unnecessarily expose her first-born and unexperienced son to conflicts and dangers, the place of his abode would be so selected, that all his wants could be easily satisfied, and every thing essential to the pleasure of his existence readily procured. He would be placed, in short, in a garden or Paradise—

"A heaven on Earth: for blissful Paradise
Of God the garden was, by him in th' east
Of Eden planted."

"Such a country is found," says Mr. Lawrence, "in central Asia, between the 30th and 50th degrees of north latitude, and the 90th and 110th of east longitude (from Ferro); a spot which, in respect to its height, can only be compared to the lofty plain of Quito in South America. From this elevation, of which the great desert Cobi, or Shamo, is the vertical point, Asia sinks gradually to all the four quarters. The great chain

of mountains, running in various directions, arise from it, and contain the sources of the great rivers which traverse this division of the globe on all sides; the Selinga, the Ob, the Lenci, the Irtisch, and the Jenisey, in the north; the Jaik, the Jihon, the Jemba, on the west; the Amur and the Hoang-ho (or yellow river), towards the east; the Indus, Ganges, and Burrampootea, on the south. If the globe was ever covered with water, this great table-land must have first become dry, and have appeared like an island in the watery expanse.

The cold and barren desert of Cobi would not, indeed, have been a suitable abode for the first people; but on its southern declivity we find Thibet, separated by high mountains from the rest of the world, and containing within its boundaries all varieties of air and climate. If the severest cold prevails on its snowy mountains, a perpetual summer reigns in its valleys and well-watered plains. This is the native abode of rice, the vine, pulse, fruit, and all other vegetable productions from which man draws his nourishment. Here, too, all the animals are found wild which man has tamed for his use, and carried with him over the whole globe—the cow, the horse, ass, sheep, goat, camel, pig, dog, cat, &c., &c.

Close to Thibet, and just on the declivity of the great central elevation, we find the charming region of Cashmere, where great elevation converts the southern heat into perpetual spring, and where nature has exerted all her powers to produce plants, animals, and man, in the highest perfection. No spot on the whole earth unites so many advantages; in none could the human plant have succeeded so well without care.

It has always been a favourite conjecture, that the birth-place of man was situated in some such situation as I have described, where perpetual summer reigns, and where fruits, herbs, and roots are plentifully supplied throughout the year.

> "A happy rural seat of various views;
> Groves whose rich trees wept odorous gums and balm;
> Others whose fruit, burnish'd with golden rind,
> Hung amiable, Hesperian fables true,
> If true, here only, and of delicious taste;
> Between them lawns, or level downs, and flocks
> Grazing the tender herb, were interpos'd;
> Or palmy hillock; or the flow'ry lap
> Of some irriguous valley spread her store,
> Flowers of all hue, and without thorn the rose."

The climate of those regions, it has been said, is suited to a being born without any covering, and who had not yet acquired the arts of building habitations or providing clothes. However, in progress of time, as the land became over-peopled, men naturally

diffused themselves over the neighbouring parts. As their habitations gradually advanced, the new difficulties which they had to encounter called forth, by degrees, the spirit of invention, such as laying snares for animals, and domesticating those that were found suited to their purpose; and these have accompanied mankind in their different migrations nearly over the whole globe.

Such is the result of historical inquiry. It points out the East as the earliest or original seat of our species, the source of our domesticated animals, of our principal vegetable food, and the cradle of arts and sciences: but it does not furnish the means of deciding that all living beings originated in one spot, and from thence migrated to their destined abodes.

Buffon, I believe, was the first who advanced an opinion, that each kind had a determinate spot, which was its original abode; and that from that region it afterwards issued, according to the perfection of its locomotive faculties, and spread through distant regions: nor is he singular in the opinion, for at this period, the Mosaic account of the dispersion of animals is doubted by many persons, including learned divines and distinguished and biblical scholars. The progress of science and discovery, and the accurate accounts of various travellers, prove the impossibility that all animals were brought before Adam in the first place, and of their being all collected in the Ark in the second place.

The collection of living beings in one central point, and their gradual diffusion over the whole globe, may not be greatly inconsistent with what we know of our own species, and of the few more common quadrupeds which I have described as accompanying us in our various migrations, and are able to sustain with us great varieties of climate, food, situation, and all external influences. But when we extend our survey to the rest of the mammalia, we find at all points abundant proofs of animals being confined to particular situations; and being so completely adapted by their structure and functions, by their whole organization, economy, and habits, to the local peculiarities of temperature, soil, and food, that they cannot subsist where they are no longer found.

In proportion as our knowledge of species becomes more exact, the proofs of this locality are rendered stronger; and the examples of admirable conformity between the organic capabilities of animals and the circumstances of the regions which they inhabit, are multiplied and strengthened.

"The peculiar adaptation of the camel to the sandy deserts in which he is placed strikes the most cursory observer.* The herds of antelopes and other ruminant animals, and the great troops of

* Lawrence's Lectures.

solidungular quadrupeds, are not less suited to the boundless plains of Asia and Africa; the vast assemblages of the elk and buffalo to the uninhabited wilds of America; and the tiger to the jungles and thickets of the East Indies.

"Even where the external circumstances are nearly alike, remote regions are occupied, in most cases, by distinct genera or species. The lion so common in Africa is hardly found in Asia, while the tiger is peculiar to the latter."

Even marine animals are confined to particular situations; although it might appear so probable, *à priori*, that the waves and currents of the ocean would carry them in all situations.

But if all the difficulties, with the facts I have mentioned, were removed, insurmountable obstacles would still be found to the hypothesis of the whole globe having received its supply of animals from one quarter. How could all living beings have been assembled in one climate, when many, as the polar bear, the walrus, the manati, can exist only in the cold of the polar regions—while to others the warmth of the tropics is essential? How could all have been supplied with food in one spot, since many live entirely on vegetables produced only in certain districts? How could many have passed from the point of assemblage to their actual abode, over mountains, through deserts, and *even across seas*—for this they must have accomplished if the Mosaic history be correct? Let any one look at a map of the world, and inform me if he can satisfactorily explain how did the sloths, the anteaters, and the armadillos, get to South America, or the kangaroo, the cola, the emu, and several others, that are found in no other country, get to New Holland.

I maintain that these instances of America and New Holland alone afford unanswerable arguments against the creation of all animals in one spot.

"None of the mammalia," says Cuvier, "of the southern hemisphere, the torrid zone, or even the two northern temperate regions, are common to the two continents." When the Spaniards landed in the new world, they did not find a single animal they were acquainted with—not one of the quadrupeds of Europe, Asia, or Africa—whilst, on the other hand, the horse, dog, and other animals, that were introduced for the first time by the Spaniards, were objects of terror and astonishment to the aborigines of America."

A very easy method of explaining these queries would be to suppose that immediately subsequent to the deluge, America and New Holland, and the various other islands that are inhabited by peculiar animals, were once connected with Asia and Africa by the intervention of lands that have since

been submerged. This, certainly, would be a very accommodating recourse; but such conjectures do not merit a moment's consideration: consequently, we must admit that the animals of America originated on the very soil which to this present day they still inhabit.

The Rev. W. Kirby, author of one of the Bridgwater Treatises, has laboured uncommonly hard to reconcile the Mosaic account with zoological facts; and well knowing that if the original creation only comprehended a male and a female of each species, or that one pair only was reserved from an universal deluge, that the carnivorous animals must have perished with hunger, or have annihilated most of the other species, he states "that the instincts of the beasts of prey are restrained for the time being, and that they must have eaten grass or straw, like the ox, and neither injured nor destroyed their fellow beasts of a more harmless character, and that this harmony of the animal creation continued long enough after the fall to allow sufficient time for such a multiplication of the flocks and herds, and flights and shoals of gregarious animals, as would secure them from extinction."

Such an assumption is at variance with all our knowledge of living nature. The author first alters the natural instincts of the ferocious hyæna, the lordly lion, and the treacherous tiger, who, by one sweep of his magic wand are turned into herbivorous and ruminating beasts; but in his haste to provide for the predacious animals he has altogether forgotten the carnivorous birds of the air, together with the amphibiæ, amongst whom are found the most determined enemies to man, the rattle-snake, the boa, and the cobra di capella—animals that convert the vicinities of their abodes into solitary deserts—these, all these, are left to starve, unless they likewise eat straw and hay like the ox. Such opinions as these are, indeed, at variance with all our knowledge of living nature: why should we embrace an hypothesis so full of contradictions, in order to give to an allegory a literal construction and the character of revelation, which is so much the less necessary here, because we do not follow the same rule in other points. The astronomer does not pourtray the heavenly motions, or lay down the laws which govern them, according to the statements in the Jewish Scriptures; nor does the geologist think it necessary to modify the results of experience according to the contents of the Mosiac writings.

The Mosiac account of the deluge is insufficient to account for the geological phenomena observed in the different strata of the earth; and the result has been, that the students of the science have alternately dis-associated the system entirely

from all periods of *recorded* time, and with Cuvier have sought to explore

> "The secrets of the hoary deep, a dark
> Illimitable ocean, without bound,
> Without dimension; where length, breadth and height,
> And time and place, are lost; where eldest Night
> And Chaos, ancestors of Nature, hold
> Eternal anarchy, amidst the noise
> Of endless wars, and by confusion stand."

The deeper, we are told, that we descend into the strata of the earth, the higher do we ascend into the archæological history of past ages of creation. We find successive stages marked by varying forms of animal and vegetable life, and these generally differ more and more widely from existing species, as we go further downwards into the receptacles of the wreck of more ancient creations. And when to this is added, that there have been discovered a constant and regular assemblage of organic remains, commencing with *one series of strata* and ending with *another*, which contains a different assemblage, we have herein the surest grounds whereon to establish those divisions which are called geological formations; and we find many such divisions succeeding one another, when we investigate the mineral deposits on the surface of the earth.

The study of those remains, Dr. Buckland insists, presents to the zoologist a large amount of extinct species and genera, bearing important relations to existing forms of animals and vegetables, and often supplying links that had hitherto appeared deficient in the great chain, whereby all animated beings are held together in a series of near and gradual connexions."

Animals and vegetables of the lower class seem to have prevailed chiefly at the commencement of organic life, so that the more perfect animals became gradually more abundant as we advance from the older into the new series of depositions. Cuvier states that the result of the researches respecting the fossil bones of quadrupeds have been to establish and classify the fossil remains of seventy-eight different quadrupeds in the viviparous and oviparous classes. Of these, *forty-nine are distinct species, hitherto entirely unknown to naturalists.*

Many of these species are discovered in what are called diluvial beds, particularly those of the large kind. The Tartars suppose the diluvian bones they find to be the bones of genii: our ancestors called the large ones those of giants. We now ascertain with precision, not only the component parts of elephants, horses, oxen, deer, but we speak with confident familiarity of the "teeth of water-rats," the "left ulna of a lark," "the cora-

coid process of the right scapula of a duck" that was eaten before the deluge.

The science of geology differs from all others in one material respect: it contemplates not only what is, but what has been—it embraces the history of our globe, as well as its actual composition—and it endeavours to trace the succession of events which have preceded its present state. The opinions of the most eminent geologists confirm the statements of Moses, that the entire surface of our planet was at no very distant period entirely submerged under water; and that this deluge was *transient, universal,* and *simultaneous.* Thus the Mosaic account is in strict unison with philosophical investigation. "Behold I, even I, do bring a flood of waters, to destroy all flesh, wherein is the breath of life, from under Heaven; and every thing that is in the earth shall die."

Now, a question naturally arises, If the ark contained animals of every species, then ought we not to expect to find some of these animals alive, whose fossil bones have been found in the strata of the earth. If there are any alive, they must exist in some country not yet discovered; but it is only necessary to glance the eye over the map of the world to observe the innumerable directions in which navigators have traversed the ocean, in order to be satisfied that there does not remain any large land to be discovered, unless it be situated towards the Antarctic pole, where eternal ice necessarily forbids the existence of animal life.

I must conclude, then, that it is quite impossible to conceive that the enormous mastedontes and gigantic megatheria, whose bones have been discovered underground in North and South America, or the stupendous mammoth of Siberia, can still exist alive in any quarter of the globe; and we may, therefore, easily conceive that none of these species, at least, could have been preserved in the ark.

The true and only object of philosophy is the interpretation of Nature. We must take Nature as we find her, and dismiss from our thoughts the vain desire of modelling her according to any preconceived fancy of our own. Therefore, in an inquiry like this, concerning matters of fact, we have to *demonstrate,* not *invent,*—to inquire what has been, not to speculate on what may be.

The general dispersion of fossil remains over England are strong arguments in favour of my position. We have the remains of elephants in the diluvial gravel of Yorkshire; and in the neighbourhood of Kirkdale, Buckland has discovered a cavern containing the remains of hyænas and other animals; and the teeth, tusks, and bones of elephants of prodigious size have

been found in the diluvium at Robin Hood's bay, near Whitby, at Scarborough, Bridlington, and several other places along the shore of Holderness.

How is it possible, then, to explain the general dispersion of all these remains, but by admitting that the elephant as well as all the other creatures whose bones are buried with them, were the antediluvian inhabitants of the extensive track of country over which we have been tracing them, and that they were all destroyed by the waters. It appears to me just as reasonable to doubt that the town of Pompeii was the habitation of human beings, as to suspend our belief on the conclusion which I have drawn.

But among the different fossil remains of animals which I have mentioned, those of man were never yet discovered. This circumstance contributes to establish the position, that the human race did not exist in those countries in which the fossil bones of animals have been discovered, at the period when these bones were covered up, as there cannot be a single reason assigned why man should have entirely escaped.

Hence it follows that no remains are found, no antiquities of the numerous ages preceding the scriptural account of time, no fragments of buildings, no public monuments, no models, inscriptions, utensils, or artificial works of any kind have ever been discovered, which might bear testimony to the existence and agency of man; and yet it is a fact, which may be gathered from an examination of the strata of the earth, that revolutions and catastrophes must have occurred at wide intervals of time, of slow progressive advancement to its present state, and of the existence of various orders of created beings which successively occupied its surface, before it was fitted for the abode of man.

And now, may I be permitted to conclude by requesting those who may differ from me in opinion, to endeavour to confine themselves to the discussion that will shortly ensue on the laws and economy of nature, dismissing from their minds all preconceived opinions, and entering on the inquiry not in the spirit of a bigot, suffering a cloud of fears and hopes, desires and aversions to hang around their understandings. Our object this evening is to inquire what is true, not what is the finest theory. Truth is like a native rustic beauty, most lovely when unadorned and seen in the open light of day. Whenever it is thoroughly discussed, it will not fail to come out like tried gold from the fire. Reason, then, and free inquiry are the only effectual antidotes of error. Give them full scope and they will uphold the truth, by bringing false opinions, and all the spurious offspring of ignorance and prejudice before this severe tribunal, and subjecting them

to the test of close investigation. Error alone needs artificial support; but truth, like a Cornish wrestler, requires only a ring and fair play.

It is probable that many of you may not agree in the conclusions which I have come to,—that each kind of animal had a determinate spot, which was its original abode, and from that region it afterwards issued, according to the perfection of its locomotive faculties, and spread through distant regions. Yet thus far you must agree with me,—that the creation and distribution of animals in the first place, their destruction and the preservation of the few survivors in the second place, were the immediate acts of the Divinity, and that the same power that caused their destruction could certainly create them again.

In considering this question, we must never lose sight of Him, according to whose will, and by whose almighty power, they were first brought into being—who has changed, from time to time, after lengthened periods, the races which exist, allowing the natural extinction of some, and supplying by a new creation others more fitted to occupy the place previously abandoned. This is beautifully exemplified, as I have shewn in my lecture, in our native country, formerly the abode of elephants, hyænas, and other wild animals.

I have shewn, too, that each additional step in the grouping together of the facts of geology confirms the view that the changes of our planet, since it has been the abode of man, is but as a page in the massive volumes of its history, every leaf of which, written in the same character, conveys to the decipherer the idea of a succession of the same causes, acting with varying intensity through unequal but enormous periods; each period apparently distinguished by the coming in or going out of new subsidiary laws; yet all submitted to some still higher condition, which has stamped the mark of unity on the series, and points to the conclusion, that the minutest changes, as well as those transitions apparently the most abrupt, have been throughout all time, the necessary, the inevitable consequences of some more comprehensive law, impressed on matter at the dawn of its existence.

Some of the present company may be inclined to doubt the truth of the facts presented to us by geology, because they differ from the history of the creation as delivered by Moses, that the earth was first created about 6000 years ago. But a different interpretation has been lately put upon that passage of the Sacred Writings; and according to the highest authorities of the present time, it was not the intention of the writer of the book of Genesis to assign the date to the creation of our globe, but only

to that of the creation of man. By the creation designed in the first two verses, therefore, no prolongation of time is given, but only a creation of which no *days* can be predicted,—one which always was, and is, and is to come. God only created the world *once*, and yet is *always* creating it; nor is there more than one beginning; yet are its images many, and, in all, has its unceasing renewal and perpetual demonstration.

Thus the history of the changes of the globe we dwell upon is certainly wonderful; few, if any, signs of a *beginning* have hitherto been discovered, and no symptom of an *end*.

"Time and change are great, only with reference to the faculties of the beings which note them. The insect of an hour, fluttering, during its transient existence, in an atmosphere of perfume, would attribute unchanging duration to the beautiful flowers in our gardens. These flowers, could they reflect, might contrast their transitory lives with the prolonged existence of their greener neighbours. The leaves themselves, counting their brief span by the lapse of a few moons, might regard as almost indefinitely extended the duration of the common parent of both leaf and flower*."

It may be argued, that as the different states of the earth's surface, and the different species by which it has been inhabited, have all had their origin, and many of them their termination, so the entire series may have commenced at a certain period. And it may also be urged, that, as I admit the creation of man to have occurred at a comparative modern epoch—as I concede the astonishing fact of the first introduction of a moral and intellectual being—so also we might conceive the first creation of the planet itself.

I am far from denying the weight of this reasoning from analogy; but, although it might strengthen our conviction, that the present system of change has not gone on from eternity, it cannot warrant us in presuming that we shall be permitted to behold the signs of the earth's origin, or the evidences of the first introduction in it of organic beings.

We argue in vain to assign limits to the works of creation or *space*, whether we examine the starry heavens, or that world of minute animalcules which is revealed to us by the microscope. We are prepared, therefore, to find that in *time*, also, the confines of the universe lie beyond the reach of mortal ken. But in whatever direction we pursue our researches, whether in *time* or *space*, we discover everywhere the clear proofs of a Creative Intelligence, and of his foresight, wisdom, and power.

* Babbage, Bridgewater Treatise.

MORTALITY AMONG THE FRENCH THOROUGH-BRED STALLIONS IN 1836.

This paper, which has been unfortunately mislaid during several months, will still be interesting to the English reader. It is extracted from that interesting and valuable periodical *Le Journal des Haras*.

We have to regret the loss of many valuable stallions in 1836. We will confine ourselves to the mention of a few of them.

Trance, by Phantom out of Pope Joan, by Waxy-Prunella, by High Flyer. This horse, which belonged to the stud of Meudon, was sent to Angers in the spring, where he had covered several mares. Immediately on his return he died. He was bred by the Duke of Grafton in England, and born in 1817.

Shy, by Walton, the dam Chryseis by Asparagus—the grand dam Lady Jane by Sir Peter. Coming from the stud of Borculo, at the re-entry into France of the animals that composed that establishment, he had been placed in the stud at Rosieres in 1818, and in that at Tarbes in 1827. He had produced a great number of colts that had been very successful on the course. He was bred by Mr. Crockford, and born in 1813.

Our readers will recollect that beautiful horse *Tancred*. The breeders of Anjou have to regret his loss.

Bijou, bred by the Duke of Rutland, and foaled in 1811, son of Orville, is also dead.

Tigris, by Quiz out of Persepolis, foaled in 1812, has left in Normandy an immense progeny, many of them distinguished by their brilliant qualities. He was sent to Aurillac in 1833, and there he died.

The last that I will mention is *Young Rattler*, a half-bred horse, who has contributed to the improvement of the Normandy breed, and who died suddenly there.

So many valuable horses being lost all at once, it was imperative on those who have the management of the public studs to supply the chasm before the ensuing season. It was for this purpose that the Baron Coetdihual visited England in order to purchase some stallions of pure blood, and others half-bred of the kind which Normandy requires. Some strong and well-bred mares should also be obtained.

We cannot conclude this necrology without some remarks on the cause of the deaths of these stallions, and of many others that we have not named, and to call the attention of the directors of our studs to these losses, which are increasing every year. These stallions, submitted to a tonic and stimulating system, took very

insufficient exercise during the covering season, and they quitted their station in a state of plethora and obesity, which ought to have suggested the utmost precaution and care, during the long journeys which they were compelled to take in order to reach their homes. Instead, they were thoughtlessly hurried, in despite of the heat of the weather, and their inability to travel far. The necessary result is this: inflammatory diseases of various kinds almost invariably terminating in death. Unfortunately, the directors of these establishments cannot be everywhere at once, and they who have the care of these horses rarely deserve the confidence which it is necessary to place in them.

The appointment of Professor Yvart, of Alfort, to the Directorship of all the Government studs, will be a national benefit.

Journal des Haras.

THE PAST AND PRESENT STATE OF VETERINARY SCIENCE.

No. VIII.

[Continued from p. 77, and concluded.]

By Mr. T. W. Mayer, *Newcastle-under-Line.*

The system of public education which was stated in my last letter, and sufficient for all the purposes of effectually promoting and cultivating veterinary science, had reference to the general outline stated to be laid down in 1791; but in minute particulars it is evident from the remote period at which it was framed, and the different aspect veterinary science now wears, that it will require to be more fully carried out.

With reference to this part of our subject, I proceed to remark, and without any comments, 4thly, That in order to render the system of public instruction suggested in the regulations of the College, published in 1793, of greater benefit to the profession, it will be necessary—

1st, That several professors be appointed to lecture within the walls of the College, on the several subjects that are required for the efficient education of a veterinary student.

2dly, That the course of instruction which, with certificates of his diligent attendance, &c. shall be required of every student previous to his presenting himself for examination, occupy a period of two years, and consist of not less than six courses, three in each year. The first beginning on the 1st of October

and ending in January; the second beginning in January and ending in May; the third beginning in May and ending in August.

That in the 1st, 2d, 4th, and 5th courses, he shall attend lectures on anatomy, physiology, pathology, and morbid anatomy; practical anatomy and dissections; veterinary surgery; chemistry; the hospital practice and clinical instruction, and that with reference to every animal that may come under the veterinary surgeon's care. In the 3d and 6th courses he shall attend lectures on the principles and practice of veterinary medicine—materia medica and pharmacy—botany—surgical operations by the professor of veterinary surgery—and hospital practice; and that in the 6th course, in addition to all these, he shall be instructed in veterinary jurisprudence. That the charge for the whole of this instruction, with access to the forge, pharmacy, dissecting-room, and, under certain restrictions, the museum, be about £50.

3dly, That no professor hold two professorships, except the professor of anatomy, physiology, &c., who may hold the chair of medicine; and the professor of chemistry may lecture on materia medica, pharmacy, and botany.

4thly, That the professors of anatomy, and medicine, and surgery, be veterinary surgeons, and have the charge and superintendence of the infirmary, and alternately give clinical instruction; and that the professors of practical anatomy and veterinary jurisprudence be veterinary surgeons and assistant surgeons to the infirmary.

5thly, That none of the professors be members of the Examining Committee.

6thly, That indentures from each person of his having spent at least five years in the pursuit of veterinary knowledge, be required at the student's examination.

And now, Sir, in drawing this subject to a close, I feel I ought to apologize to you for taking up so much space in your valuable Journal which might otherwise have been better occupied; and to your readers, for taxing their time and patience. Vast as is the subject—important according to the light in which it is viewed, and feeble as has been the delineation of its details presented to your view—I rise from the consideration of it with the full conviction on my mind of the imperative necessity there rests on all the members of the profession for increased exertion, in order to secure these indispensable and paramount advantages to every veterinary student.

It is not to be left to any one man to improve the state of public or private education. More extended observations and inquiries into the causes, symptoms, and remedies of diseased organs—more accurate physiological investigation—with deeper

attention to minute anatomical details, must be accomplished by the united endeavours of us all. We must (if this is to be effected) have none of that cold and listless spirit, sometimes remarkable in those amongst us who have finished their studies, and are comfortably settled in life, and who care not a straw for the profession, any further than affording a livelihood; who never search for hidden truths, or, grappling with them when accidentally found, strive by still closer examination to raise further, even by the addition of a mite, the advancement of veterinary science.

There must be none of that condemnable spirit, which calls our professors *asses*, and the greater part of the profession *fools*; and which has defeated, and always will defeat, those salutary objects and measures which may elevate the character of our art.

We have observed what the good effects of friendly association are—we have felt its constraining influence—we have seen how it offers an inducement to deposit in our general storehouse of science, the little gleanings that we gather in the streets of cities and in country farm-yards—assuring us, that, beside the inward pleasure we may experience in performing so good an action, we shall receive interest for its use.

We have seen how veterinary science at large calls us to put our shoulders to the wheel, and urge her forward in the course of improvement. We have seen how she has been assisted in her onward progress by the labours of a Blaine, a Clark, a Coleman, a Field, a Goodwin, a Percivall, a Sewell, a Turner, a Youatt, *cum multis aliis*. And will the junior practitioners of the present day refuse to contribute their share towards the advancement of our noble art? Shall we behold the struggles she is making towards attaining that station which belongs to her, and lend no helping hand?

I respectfully call upon veterinary surgeons everywhere, if they have the slightest love for their profession, if they value their own station in society, or have any regard for their brethren, to unite in promoting, by every means in their power, the real advancement of the veterinary art; and, in all her several departments, to raise her in the estimation of society by their conduct and respectability: and also to support, by their exertions, those who seek to carry out the real wishes of the profession. The labours of one or a few of us, let them be highly talented and animated by a degree of zeal worthy of the cause in which they have embarked, will be of no avail unless they are supported by the well-thinking portion of the profession. And whatever is done must not be performed grudgingly, for it is essentially *their duty*.

I wish to press this point more especially upon the consideration of us all. It is the duty of every member of the profession to contribute by his inquiries, his observations, his writings, and his actions, to the general welfare of the science; for there is no man who may not contribute something, and the credit which will be due to him will not be *for the performance of a mere duty, but for the zeal and energy with which that duty is fulfilled.*

If such are the paramount obligations binding upon the profession, what must be the duty of those whom we consider as the Governors and Council of our College—the regulators of our professional education? It is not necessary in this part of our subject that we should be led into the consideration of what has been done by them, or, rather, what has been left undone; for we have hitherto, I hope, omitted any thing that would lead to unprofitable discussion, or cause unnecessary bad feeling or opposition. We may, however, with strict propriety, consider *what is their duty now.* For if it has been proved that it is absolutely necessary that an efficient system of public education should be carried out, and if the profession wants raising in character, it must be evident that those means which will accomplish so desirable an object it is their duty to adopt. In short, as the guardians of youth, the disseminators and cultivators of professional knowledge, the duty of improving the state of veterinary science is theirs.

Upon these simple words, *Fulfil your duties,* rest all our hopes for the future; and according as they are carried out in all the various relations of life, public and private, according as genial sentiments of friendship and esteem prevail amongst the members of the profession, so will veterinary science prosper and increase.

If, on the contrary, duties are neglected, and slumber takes possession of us—if all social feelings are discarded—if men whose intentions are good are subjected to abuse and hatred—if opportunities for diffusing truth are made the arena for angry dispute, or for the circulation of error—the profession will rapidly sink in the estimation of the public.

Such are the hints I venture to press upon the attentive consideration of the profession. And if, in after-times, some one more capable than myself of handling this subject should take it up, my earnest desire is, that they may be able to say of the present race of veterinary surgeons, that their labours made the dark periods of our profession more visible, and added greater lustre to the light.

ON FRACTURES AND DISLOCATIONS.

By Mr. W. C. Spooner, *Southampton.*

It appears to me to be extremely desirable, that when any writer in The Veterinarian takes up an important subject, for other writers to communicate their opinions and experience on that subject before it is suffered to die away or cease to be impressed on public attention. It is this view of the matter that induces me to communicate a few remarks, &c., on the above subject, to which attention has lately been very properly directed.

I was more particularly pleased with a paper from Mr. Mayer in the last Number, which contains many very useful and judicious observations, and, amongst others, impresses the important fact, that fractures may take place without the bones becoming immediately displaced thereby. It is, indeed, this fact, as I take it, which Mr. Mayer points out, and which most veterinarians are aware of, that distinguishes the few cases that are curable from the many that are not. For one of the chief reasons why so few cases of fractures are cured, is because they are seldom discovered at the moment they occur; and, if so, it is rarely possible to put the animal immediately in a state of rest, for the accident frequently happens when he is far from home. This, too, I imagine, is the reason why several bones of the extremities are often broken at the same time. I have known the metacarpus, both pasterns, and the coffin-bone, all shattered together while the animal was working steadily in a coach.

A few months since I met with a case of fracture of the spine. I had not attended the case, but was requested to examine the body, in order to ascertain what had been the matter with the horse, as the farrier had bled him, and given him some physic; but, in spite of this, as the horse could not get up, he was ordered to be killed. The muscles of the loins presented some appearance of ecchymosis; but, on further examination, I found that the spine was completely fractured at the third lumbar vertebra, or between it and the fourth, so that nothing connected the parts but muscle and membrane. The spinal cord, before the sheath was removed, presented the appearance of being indented at the situation of the fracture; and, on cutting into the sheath, a black mass of coagulated blood was seen, four inches in length, and destroying the substance and form of the cord.

I found on inquiry that the horse had been clipped about three weeks before, and that he had afterwards, for the purpose of sweating him, been gallopped sharply on rough ground, and pulled up suddenly and repeatedly. Since this time he had not gone so

well as before, and would not canter readily, though he had previously been much used to this pace. Two days before he was destroyed, the groom was riding him at a slow pace, when he suddenly gave way behind, was carried home, and would not stand afterwards. Now this horse, I take it, must have either fractured the spine slightly when pulled up suddenly as aforesaid, but without displacing the bones; or otherwise the muscles of the loins might have been strained at that time so as to have rendered them incapable of performing their office properly, and thus, by the deprivation of their accustomed protection, the spine was in greater danger of injury and fracture.

CASE OF FRACTURE OF THE ULNA.

By the same.

About a year and a half since, I was requested to attend a horse belonging to George King, Esq., of Redbridge, in order to decide whether it was worth while to keep the animal, or to have him destroyed. It was a spirited and favourite horse, and very excellent in harness. He had been kicked about three weeks previously by another horse just below the elbow of the near fore leg, and had since this period been attended by a professor of the veterinary art residing near the spot, whose treatment consisted in sundry applications of certain stimulating oils to the part affected, the horse being at the same time, and by his recommendation, turned out with other horses in a water meadow; so that, when I saw him first, he was tormented with the flies, and jumping over the ditches with three legs, whilst the fourth was dangling in the air.

On examining the part attentively I discovered a longitudinal fracture of the ulna to some extent; and I began to fear, from the long period that had been suffered to elapse, and the irritation thereby produced, and the allowing the triceps muscle to continue its action during this time, that the result would be unfavourable. However, I had the animal confined to a shed, placed a high-heeled shoe on the affected limb, inserted a seton near the part as a counter-irritant, and also to assist in keeping the limb quiet, and some days afterwards applied a charge round the part. The animal was kept about two months under treatment, during which time his amendment was plainly manifested: he was then turned out for several months, came up free from lameness, and thus worked sound up to the present day.

When called in to a case of fracture, the veterinary surgeon has

many considerations to weigh in his mind before he decides either to attempt a cure or to destroy the animal. He has to consider the nature of the fracture; whether (should circumstances prove favourable) a union of the bones is likely to take place without any after lameness; whether the animal is sufficiently steady and quiet to submit to the necessary restraints; and whether the value of the horse is sufficient to defray the expenses arising from his medical treatment and keep for a long period.

In the majority of cases these considerations will be of an unfavourable nature; and he will feel it his duty to advise the destruction of the animal. There are, however, some cases which, judiciously treated, are likely to terminate favourably, and, if the horse is of sufficient value, may fairly be taken in hand. The more intimately and immediately, however, the fractured bone is connected with muscles, the greater is the probability that the sequel will be unfavourable, because it is so very difficult, and, indeed, almost impossible, to prevent these muscles from contracting and pulling asunder the fractured bones. This it is which places us in so disadvantageous a position compared with the human surgeon, for however quiet the animal may be, yet the sling is a poor substitute for the horizontal posture.

We have also another great difficulty in the adjustment of splents, so much more inconvenient in the limbs of the horse than in man. In fractures of the metacarpus or pasterns I would suggest the employment of a sort of leather case, such as the leg of a boot, which, after the limb has been well protected by tow, &c., might be filled up with melted pitch, or some such substance. This would afford great support to the leg, and keep it in one position.

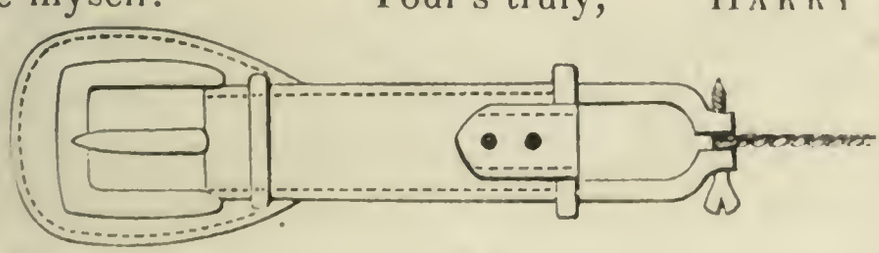
TO THE EDITOR OF "THE VETERINARIAN."

Sir,—A TRIFLING error of your artist in the delineation of the hobble for the near fore leg requires a little correction.

It appears to me to have been engraved on the block in the same manner as it was drawn upon the paper, instead of reversing it.

You are in possession of a correct drawing, where the head of the thumb-screw is downwards; but, lest it should be mislaid, I have subjoined another.

I am happy to hear you are fast recovering, and beg leave to subscribe myself. Your's truly, HARRY DAWS.



EXOSTOSIS OR OSTEOSARCOMA IN THE BONES OF THE FACE.

By Mr. Harry Daws.

Fortunately for the animal, as well as the veterinary surgeon, this disease is not very common among us. Mr. Percivall related one case in the last page of his first volume; and I have had an opportunity of witnessing the progress and treatment of this odious malady from its commencement to its termination.

The horse was attended by a member of the profession of no mean celebrity, a gentleman whom I much respect, and to whom I am greatly indebted for any knowledge I may have acquired of the veterinary art.

Sept. 1836.—An aged favourite brown gelding, the property of J. C. Price, Esq., of Mecklenburg Square, was the patient. An enlargement on the near side of the face, about the size of a hen's egg, first made its appearance between the orbit and infra orbitar foramen. It remained unaltered for some months; but was occasionally accompanied by a fetid purulent discharge from the nostril on the same side.

The treatment adopted at this time was, repeated blisters on the tumour, and injections of chloride of lime up the nostril.

February 1837.—The nostril has become gradually impervious, and useless as a respiratory tube. For some time previous he made a trumpeting kind of noise in his breathing when exerting himself, as his owner continued to drive him. I thought it a good case for Mr. James Turner, respecting his new views of roaring; but was not able, from certain circumstances which occurred at the time, to exhibit the subject to him, although I very much desired to do so.

March.—The tumour continued to enlarge with amazing rapidity. The bones of the face had become partly absorbed, and they might have been broken down by the slightest pressure. He was cast, and a leaden bougie tried to be introduced through the nostril, but ineffectually. A slight sanious discharge followed its withdrawal. Ulceration had commenced on its surface, and two or three sinuous openings were apparent.

April.—The owner determined to turn him out for life. The tumour was still enlarging, and was now about the size of a moderate pumpkin. The disfigurement of the face was horrible in the extreme. The left eye appeared as if pushed up higher than its fellow. There were ulcerations in various places on the surface of the tumour.

June.—Little or no alteration. He had become quite a nuisance. His kind and benevolent owner signed his death warrant, and he was destroyed by opening the carotid arteries.

The tumour extended from the junction of the parietal and frontal bones above the orbit to the end of the nasal, and from the septum nasi (through a portion of which it extended to the frontal sinus on the off side) to the superior maxilla, enveloping the whole of the facial bones and the roof of the mouth, including four molar teeth, and extending as far as the ethmoid and the face of the sphenoid bones. The inner cranial surface of the frontal and ethmoid bones was carious.

It weighed, when detached, upwards of eleven pounds, and was of a fungoid fatty character; irregular in its shape. It measured sixteen inches long, twenty inches in breadth, and two feet eleven inches in circumference. The appetite and general health of the animal remained unaffected until his death.

Had this poor fellow been my patient, I should have anticipated a different result. The life of a noble animal is, to me, as precious as my own: at all events, his sufferings should not have been so protracted. I would have endeavoured to excise the tumour by the knife in its early stage. What could have prevented a favourable termination? I have frequently read of similar operations being performed with success on the human subject; and I have often seen the cavities of the nostrils laid open by accident in the horse, and nothing untoward has occurred.

Will some of your readers kindly favour me with their ideas respecting the practicability of my treatment in a similar case?

If I have not delineated this case so correctly as it should be, there is one or more who can; at all events, there is nothing extenuated or aught set down in malice.

THE VETERINARIAN, APRIL 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

Had we felt ourselves capable of furnishing the leader of the present number, we should, nevertheless, have given precedence to this most interesting account of the establishment of the Abou Zabel school. Certain parts of it come home to our business and

bosoms. Who can read the history of the struggle and the victory without intense interest? M. Hamont deserves the gratitude of the Egyptian veterinarian, and he will be held in honourable remembrance by his brethren everywhere.

The calm, argumentative, unanswerable summary of Mr. Mayer's letters on "The past and present State of the Veterinary Profession" will be duly appreciated. We have the satisfaction of knowing that he speaks the sentiments of the decided majority of his brethren. No radical demolition, under the name of sweeping reform, is contemplated by any one who wishes well to his profession: but the time is rapidly approaching when those simple but extensive changes in our school, which the *instruction of the pupil, and the honour of the teachers, and the improved state of veterinary science demand,* will assuredly be made.—We trust that we shall be enabled to resume our post in the next number. Y.

A SKETCH OF THE STATE OF VETERINARY MEDICINE IN EGYPT.

By Professor Lautour, *of the Abou Zabel Veterinary School.*

The study and the scientific practice of veterinary medicine is of very recent date in Egypt. Until with a few years it was not known even by name, although human medicine had long been established in the principal towns, and in the army, and had rendered immense service to both. The only persons who could be considered as representing the art of curing the various animals were the Turkish farriers, compared with whom the farriers of France, even in the very rudimentary state of veterinary science, may well be regarded as scientific men. The ignorance of these people, in fact, surpassed every thing of which we can possibly form a conception. It might be truly said of them, that they neither perceived nor comprehended the nature of any disease, until the moment when the dying patient forbad the slightest hope of success. The result also of the means which they employed in the treatment of disease could never be doubtful, since they were either ineffective or *incendiary*. They could not retard the approach of death, and they very

frequently hastened it. In such a state of things the professor of the art of curing the disease of animals was not deserving of the slightest consideration.

Another cause, which seemed likely to prolong this state of humiliation, or rather of non-existence of veterinary science in Egypt, had its source in the inveterate prejudices of the peasants. They were educated in the belief of true Mussulman fatalism; and, persuaded that every thing was the result of some occult and irresistible power; and fearing to offend Providence by opposing its eternal decrees, they had recourse only to superstitious and horrible practices, in order to ward off the evils that threatened their cattle.

This was the state of the healing art in Egypt, as it regarded animals, in 1828; and such it would have remained until the present day, if Mehemet-Ali, the Viceroy of Egypt, to whom that country was already indebted for the introduction of many useful institutions, had not perceived the high importance of veterinary medicine, and formed the project of realizing on the banks of the Nile that which had been recognized as indispensable to the prosperity of every European state. It was to MM. Hamont and Prétot, veterinary surgeons from the school of Alfort, that he confided the difficult commission of importing on Egyptian land a knowledge of the medical treatment of animals, and, in some sort, naturalizing it in that country.

MM. Hamont and Prétot signalized their arrival in Egypt by rendering to that kingdom the most important services. A devastating epizootic raged among the cattle in Lower Egypt, the ravages of which were presently arrested by the measures that they adopted.

Many obstacles, however, opposed them, and rendered it extremely difficult to conduct their enterprize to a successful termination. They had, in fact, to struggle against vexations of every kind. The Turks previously employed, and from interest deadly enemies to its progress, were eager to strangle in its birth an institution the utility of which they could not comprehend. The new professors had to combat that spirit of routine everywhere established and powerful in the country. They had

to teach these men the study, altogether new to them, of the numerous morbid agencies which exercised so cruel an influence over the whole of Egypt; and, worst of all, they were entirely ignorant of the language of the people, and often without any interpreter by means of whom they could make themselves understood.

In spite of all these obstacles, their efforts were crowned with such happy results, that the Egyptian government was eager to found a school like those in France. Pupils flocked from every part of Egypt, and an institution was established at Rosetta, the seeming centre of all the epizootic miasmata.

Then commenced for M. Hamont a long series of labour and fatigue, and in the midst of which his activity and his zeal were never relaxed. When this nascent institution required additional surveillance and instruction, M. Prétot met with an untimely death, and M. Hamont found himself alone. He sunk not, however, under the task; but he alone organized, he alone brought to a state of perfection scarcely credible, the Egyptian school.

A little while afterwards the institution was transferred from Rosetta to Abou Zabel, and united with that of human medicine. The pupils arriving from Rosetta attended the courses of materia medica, chemistry, and pharmacy appointed for those of human medicine. For every thing else they were indebted to M. Hamont.

This state of subordinacy of veterinary to human medicine could not continue long. M. Hamont felt that it was a question of life or death for his institution. He was convinced that this incorporation of veterinary medicine with that of human, under the inspection of a board of health composed of practitioners of human medicine alone, would place the former in a state of vassallage and inferiority that could not fail of embarrassing its future progress. He therefore protested and struggled against an authority arbitrarily imposed on an establishment which owed its existence to his labours and those of M. Prétot. In the midst of endless contention on this point, M. Hamont was often obliged, and during long periods, to absent himself from the school, for the care of the cavalry depôts everywhere devolved upon him:

he was, however, enabled to make such arrangements that the course of instruction was not interrupted, and his pupils always maintained an honourable rivalry with those of the medical schools.

At length, in 1833, veterinary medicine was established on a more enlarged and solid basis. It became completely independent of human medicine: a director, and four professors under his especial *surveillance*, were appointed, and the veterinary pupils were promoted to the grade of officers, and rendered equal to the human surgeons in rank, as they already were in science.

This new organization, however, provoked the most violent opposition. The adversaries of the institution, consisting of the director and the professors of the medical school, and the members of the board of health, presented petitions and memoirs without end. The affair was referred to the military board, and discussed there. The medical men insisted on the inferior estimation in which the veterinary surgeons were held in the respective regiments, and, by calculations, more or less erroneous and exaggerated, pretended to prove that a union of the two schools would save a very considerable expense. In consequence of this they obtained a decision *(un firman)* which gave them the victory. M. Hamont, however, was not discouraged by this first reverse. His zeal and firmness had not been sufficiently appreciated by his enemies. He persevered until the independence of veterinary medicine was fully acknowledged. His task, however, was not, in his own estimation, yet completed, and he had still important services to render to veterinary science.

The institution of public studs remained yet to be founded. M. Hamont was deeply sensible of the importance of organizing this essential branch of rural economy, and of allying it, as it naturally ought to be, with veterinary medicine. In 1833, and in consequence of his assiduity, and the presentation of various memorials, the building of the stud-house at Choubra, in the neighbourhood of Cairo, and destined to contain 800 horses, commenced. Other establishments of a similar kind were founded in Egypt and Syria, and plans were introduced for the amelioration of the breeds of cattle and sheep.

Before M. Hamont arrived in Egypt the management of the animals in the stud-houses was most unscientific and absurd. The horses and mares were day and night tied by all four feet, without the possibility of the least exercise. The quantity of barley and of water allowed them for the four-and-twenty hours was given all at once; the stables were always inconvenient, and never ventilated; and the intercourse of the sexes took place at every period of the year, and without any regard to the qualities or points of the parents.

The most serious inconveniences naturally resulted from this preposterous system. The horses condemned to this almost deprivation of motion began to lose, to a certain degree, the use of their limbs, and were never equal to rapid or long-continued exertion.

The faulty habit of giving them food only once in the day caused various diseases and morbid changes in the abdominal viscera, and of which the liver was the principal seat. The impregnation of the mares depending entirely on chance, a great proportion of the foals were either ill-formed, or produced at a time of the year when the rain and cold exercised an unfavourable influence on their growth, or developed in them the germ of glanders or farcy.

M. Hamont had to repair all these errors; and he established himself at Choubra, where his presence had become indispensable. It was no longer necessary at the school of Abou Zabel, which was now perfectly organized.

It was in the month of February, 1836, that M. Hamont definitively assumed the direction of the stud at Choubra. He limited the use of the stallion to the period between the 1st of March and about the 15th of May, depending on the character of the season. He reformed the method of feeding, and in the course of the first year he reduced the number of deaths to less than half of their usual average.

After having completely reformed the stud, M. Hamont, always indefatigable, directed his attention to the improvement of the breed and management of the sheep; and he caused a building with the necessary conveniences, to be erected in the centre of the Delta, about twenty-five leagues from Cairo.

Let all due praise be rendered to M. Hamont, who has so successfully followed out the plans of Bourgelat in a foreign country. All honour to him who has devoted a life of labour and of continual sacrifice to the conferring of the benefits of civilization on an ignorant and barbarous country. Well has he deserved the esteem of his fellow citizens, and the especial gratitude of his veterinary brethren.

Récueil de Méd. Vét., Nov. 1837.

Extract from the Compte Rendu of the Labours of the Royal Veterinary School of Alfort, during the scholastic Year 1836-7.

Chair of Anatomy. *Professor M.* Rigot.

The examinations which we have this year made of the animals sacrificed for the instruction of the pupils have had reference, as heretofore, either to normal or pathological anatomy.

Among the former, we may select those that have had for their object the structure of the pituitary membrane of the horse, and of which the following are the results:—

1. That the external layer of this membrane appears to be entirely constituted of a very thin net-work of lymphatic vessels, into which mercury may be easily injected, if a proper syringe and tube is used.

2. That these vessels appear to be of equal bulk in every part of the pituitary membrane.

3. That when the injection is too forcibly made, the mercury appears in exceedingly small globules on the free surface of the membrane, and passes at the same time into the subjacent venous sinuses.

The new researches which we propose to make respecting the anatomy of the tissues, will discover whether these vessels communicate directly with the submucous veins, or whether they abut on certain special confluent branches, which escaped our first investigations.

From the time that we were enabled to announce that there could no longer exist any doubt as to the muscular structure of the

exterior membrane of the ureters, we have constantly, in animals recently killed, applied a stimulus to these textures, and we have always produced evident contraction. We have, many times, and under similar circumstances, repeated this experiment on various excretory ducts *(canaux efférens)*, and on the ductus choledochus, with precisely the same results; so that we are now enabled to state that the elementary tissue in all these organs is the same. The same structure must be acknowledged to exist in the salivary ducts, or, at least, in those of the parotid gland; especially if we consider, in the first place, that the saliva is darted out in a jet from any opening in the parotid duct, whenever the food which he likes is placed before a half-famished animal; and, in the second place, that the parotid ducts receive, as we are assured, many fibres from the facial nerve, which is, as is well known, one of those that preside over the movements of the muscular portions of the face.

Among the pathologico-anatomical facts which we have collected during this year, is a case of spontaneous and recent rupture of two of the internal ligaments of the coxo-femoral articulation (the hip-joint), without displacement of the articular surfaces, and without rupture or even distention of the synovial membrane, or of the membraniform ligament which surrounded it. The horse in which this lesion was observed halted in his hind limbs, in nearly the way that is observed in sprain of the loins, or in enlargement of the spermatic cord. Another horse, that had a hard and indolent enlargement of the knee, to our great astonishment presented a rupture of the central fibres of the perforans tendon, where it passes under the carpian arch. The circular fibres of the tendon, perfectly uninjured for a line in thickness, formed the walls of a cavity nearly two inches in length, which contained nothing but the lacerated extremities of the small bundles of fibres.

On the post-mortem examination of a horse that was lame in the shoulder, we found, at the point of insertion of the tendon common to the great dorsal muscle and the long adductor of the arm, an osseous production of an irregular surface, which compressed the nervous branches of the brachial plexus descending on the inside of the humerus. The neurilema and the

pulpous substance of these nerves were as red as wine-lees. This specimen is deposited in the museum.

From careful study of the anatomical structure of the soft and indolent tumours that have their seat on the poll of the horse, and the development of which appears to be owing to the pressure and friction of the head-stall in that lesion, it results,

1. That these swellings are never owing to dilatation of the synovial capsules of the occipito-atloidean joint.

2. That they are always composed of subcutaneous or intermuscular cysts, the fibrous texture of which, sometimes simple and sometimes diverticulated, either contains a yellow viscid liquid, or no morbid product.

3. That the straight and complex muscles oftenest undergo a lardaceous transformation, which either simply borders upon or traverses these pouches.

4. Finally, that the substance of the cervical ligament, always more or less injured, is sometimes destroyed through a very considerable portion of its extent.

A great number of dissections have also apprised us that the greater part of the synovial tumours, whether articular or tendinous, are not always attributable, as has been generally believed, to a simple distention of these membranes, but oftener to their rupture; without which, besides, it would be very difficult to explain either the sudden appearance of these tumours, or the enormous bulk which they sometimes acquire in a very little time.

Among the tumours of this kind, which we have oftenest had occasion to observe, and of which no mention is made in any of the veterinary annals, are—

1. Simple dilatation, or with rupture of the external synovial capsule of the femoro-tibial articulation, at the point where this membrane prolongs itself to line the tendon common to the anterior extensor of the foot, and the flexor of the metatarsus.

2. That dilatation not less remarkable with the synovial membrane of the articulation of the second and third phalange, at the point at which this membrane corresponds with the intermediate space between the anterior and posterior ligaments—dilatations most frequent and of most considerable size in the fore

extremities, and which we oftenest observe on the inner side of the foot.

3. A distention with constant rupture of the superior synovial membrane of the knee, constituting a projection, sometimes of very great size, on the outside of the fore-arm, and precisely over the course of the lateral extensor tendon of the foot.

Réc. de Méd. Vét., Nov. 1837.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Stable Economy: a Treatise on the Management of Horses in relation to Stabling, Grooming, Feeding, Watering, and Working. By John Stewart, Veterinary Surgeon, and Professor of Veterinary Medicine in the Andersonian University, Glasgow.

He who would discharge his duty to his employer, in the medical treatment of the horses committed to his care, should be perfectly master of the minutest particular relating to these five grand essentials—the stabling, grooming, feeding, watering, and working. He should be well grounded in the general principles of each, and in the necessary variations in the actual practice of them, according to the kind of horse, the work, and the degree of health and disease. He should be capable of detecting, at a glance, the slightest deviation from the proper management of the animal, or the general establishment.

Where shall the young veterinarian obtain this knowledge? Possibly from the instructions and practice of his father, or from his being accustomed to the management of horses from his early youth: certainly not from any hygeian lectures, if we may so term them, which he will receive in our recognized schools of veterinary instruction.

The student and the practitioner will be under great obligation to Professor Stewart for taking up so humble and disregarded, but all-important a branch of veterinary science. He brings with him a perfect acquaintance with his subject. His style is simple, but peculiarly terse and forcible. There is no misunderstanding what he means to inculcate, and no power of resisting the impression of its truth and importance.

We shall return to the review of this useful work at a future opportunity—our object is now to announce it; and the announce-

ment of a systematic treatise on such a subject, and by such a writer, will induce the majority of our readers to judge of it for themselves.

We extract, at present, one short passage only, on a most important and strangely misunderstood point of stable management:—

"Much of the opposition to ventilation has arisen from an error, very common among those who recommend it. They invariably confound a hot stable with a foul one. The two words *hot* and *foul* are seldom separated. The stable is spoken of as if it could not be hot without being foul; and the evils which spring only from foulness are attributed to heat. Hence, those who happen to have a stable warm, or it may be hot, and at the same time clean, are very apt to oppose the practice of ventilation. Their horses do as well as those in colder stables, and, it may be, they do better. One will say, I find the practice of airing stables does no good, it is founded upon theory, it won't stand the test of experience. My horses look as well again as those of my neighbours over the way, and my stable is like an oven compared to his. This may be quite true. To look well, a horse must be kept warm; but to be well, fit to do all the work a horse can be made to do, he must have pure air. We are not contending, or, we should not be contending, against a *warm*, but against a *foul* stable. In general, it so happens that the air in becoming warm also becomes impure. But this is not a necessary consequence. Air may be cold, and at the same time quite unfit for breathing; and it may be hot, and yet perfectly free from impurity. There may be stables in which the atmosphere is perniciously hot, but I do not think I have ever seen them. I have not been able to trace a disease arising from warm or hot stabling: but every year affords innumerable examples of what mischief can be done by a foul stable. Of course, these foul stables are always hot; but, in my belief, it is the impure, not the heated air from which disease arises. Many stables remarkably warm are remarkably healthy. It is important to make this distinction. The horse can be kept warm without being poisoned with foul air. It is so well known among stable-men that warmth is congenial to the horse, that it improves his appearance, and gives him greater vigour, that it is perfectly useless to offer any opposition to it. Practice will always prevail over theory. We ought not to oppose warmth, but the means by which warmth is given. The horse should be kept comfortably warm, but he must have pure air. A cold stable is not so dangerous as a foul one."

Veterinary Jurisprudence.

[We insert the following on account of the curious plea urged by the counsel for the prisoner, and the nonsense of the whole affair. Surely there is no doubt as to the names by which sheep of every age are generally acknowledged and that ought to have overruled any local peculiarity. There is much reform wanting in our veterinary jurisprudence of every kind.—Y.]

NORTHERN CIRCUIT, CARLISLE, *Thursday, Feb.* 22, 1838.

Crown Side.—(Before Mr. Justice Patteson.)

ALEXANDER M'CULLY was indicted for killing, with intent to steal, one hog sheep, the property of Matthew Brown, of Cummersdale.

Mr. Ramsay conducted the prosecution, and Sir Gregory Lewin the defence.

The prosecutor, it appears, resides at Cummersdale, about two miles from Carlisle. On the evening of Friday, Feb. 16th, he had forty-one hog sheep in a field called Low Brooms. On the morning of Saturday one of them was missing; and, on a search, the skin, head, and part of the entrails, were found in a small plantation adjoining that field. The skin bore the marks of having been hastily removed from the carcass, and by some one not well accustomed to similar operations; being cut in several places, and having, adhering to it, portions of the "fell" or film usually left on the meat by regular butchers. Lying near the skin was a portion of purple weft. The liver of the animal had been taken away, but the other viscera were left.

On the morning of Sunday, about four o'clock, the superintendent of the Carlisle police went to the house of the prisoner, which is in Shaddon Gate, on the Cummersdale side of the town. He rapped at the door, and was answered by the prisoner. On apprising him of the purport of the visit, admission was refused; but, after some parley, the door was pushed open. The fastening yielded to very slight violence; and, at the moment the door was opened, the prisoner's wife was (by the light of a lantern carried by the police) seen in the act of standing on a box and reaching into a cupboard, in which, on examination, twelve pieces of mutton, with portions of a sheep's liver, were found. The prisoner was in bed, and, at first, refused to accompany the officers, but yielded on their proceeding to take measures to compel him. On an examination of the mutton found in the cupboard, it appeared to have been skinned and cut up

very unskilfully; the fell being removed from many parts and the joints divided in an unusual way. On a portion of the breast was a small fragment of wool adhering to the skin. On examination of the skin left in the field, there was found a small hole corresponding with it.

The prisoner, it also appeared, was a weaver working in Mr. Stoddart's factory in this town, and was one of four men in the factory usually employed upon weft of the particular colour and texture of that found in the field. There was some weft of a corresponding quality in his house.

According to the testimony of the witnesses for the prosecution, the lambs of last year are always called "sheep" after Martinmas; and some of the witnesses were of opinion, that from that time until they were two years old, they were called "sheep" without any distinction of sex. None of the witnesses were able to state the sex of the animal in question.

Sir Gregory Lewin objected that the sex of the animal not being proved, the prisoner must be acquitted. The words of the statute were, "any ram, ewe, sheep, or lambs." The term sheep in the statute was evidently appropriated to the male animal, and such must have been the ground of the decision in Rex *v.* Puddifort, where the prisoner was indicted for stealing a sheep, and it proved to be a ewe. He was acquitted: so here, the evidence for the prosecution not having proved it affirmatively to have been a "sheep," failed to that extent.

His lordship, in summing up, stated to the jury, that in case they should be of opinion that the prisoner had been guilty of stealing the animal in question, it would be desirable they should find whether between the period of an animal of this species ceasing to be a lamb, and its acquiring the distinctive appellation of sex, there was any interval during which it would be called a sheep "only," without regard to the sex of the animal.

The jury found the prisoner guilty; they also found that there was no such interval.

His lordship reserved the point.

GARDON *v.* NORTON, SEN.

Mr. Sergeant Talfourd and Mr. Keating appeared for the plaintiff, and Mr. Sergeant Ludlow for the defendant.

An action was brought to recover the price of a horse (£25). A correspondence between the parties was put in and read; from which it appeared that the sum in question was agreed upon, and the horse was to be sent to a certain house, with a receipt and warranty. The horse was sent, but defendant's son, who

was to have met the plaintiff's servant, not being there, the man left the horse, with orders that it was not to be delivered without the money; and he took back with him a letter which he was to have delivered, containing the warranty. The defendant's son some time afterwards arrived, and took the horse home the same night, without the warranty, and consequently without leaving the money. The defendant thought that something was wrong about the horse, and returned him on the third day. Plaintiff refused to take him in; and the animal was driven out of his yard by his direction, impounded, and sold.

The question left to the jury was, whether the warranty having been a condition precedent, the defendant, not having received it, had returned the horse within a reasonable time.

The jury found for the defendant.

Dreams of the Olden Times.

How to plom vp a Horse, and make him fatte and lustie; and also how to keepe a Jade from tiring by the Way, and to make her to foame at the Bit.

Take Œnula Campana, commin seed, tumericke, and annis-seeds, of each a pennie-worth, and seeth them well with three heads of garlicke amongst them, well stamped, in a gallon of ale; then streine it, and expresse as much of the substance as you may well wring out, and giue your horse to drink there of blood warme, a full quart at once; and then ride him til he be hot, then stable him, litter him well and currie him until he be colde; doe the like two or three morninges together, and so turne him to grasse, and he will thriue wonderfullie in a short time. Some commend a handful of grunsell sodden in the afore said ale with the rest of the ingredientes.

But if you keep him in the stable, giue him to eat in his prouender the rootes of Œnula Campana with some commin seeds both beaten togither, or y^e^ œnula campa small shred for fourteen days togither, and it will make a leane jade to thriue more in one month than otherwise she would doe in three.

When you ride abroad vpon a hired Hackney, carie a good quantitie of the powder of œnula campa with you in some leathern bag; and when others doe baite their horses in their ordinairie manner, your horse being first well walked, littered, and rubbed, giue him a handful of this powder in a quart of stronge ale with a horne, and tie his head high to the rack, and you need to giue no other or verie little prouender vntil night; then let him be well meated, and giue him in the morning two peny vworth of bread and his ale with the powder, but water at night.

This a friend of mine yet living did learn of a good fellow that had been a ranke rider in his daies, by whose meanes though his hackney tired at Bristow, yet this companion for his better encouragement seeing him all out of heart, by reason that he was like to lose so good companie as was then gathered together, he exchanged horses with him, and brought the hackney (by the means aforesaid) verie quicke and liuely vppe to London: and also if you tie a prettie little bunche of peni-royal, about the bit within the horses mouth, the horse champing thereon will foame gallantlie and trauel with muche more courage. Another gentleman told me that whenever he found any jade to tire vnder him, he would presentlie take off his saddle, and with a good quantitie of *arsesmart* (which is a herb that groweth in almost euerie ditch and standing water) rubbe him well on the backe vnderneath the saddle, and afterwarde lay a good quantitie of *arsesmart* vnderneathe the saddle, and so ride him any reasonable journey. These secrets I thought good to discouer for the benefite of all English trauellers, and I hope they are true, because my authors are aliue, and speake of their owne experience, and not by bare report from others; they doe also carrie great probabilitie with them.

Sir Hugh Platte's Jewel House of Art and Nature, 1594, *p.* 27.

The French Stud-book.

Every country that has occupied itself with the amelioration of the breed of horses, has deemed it indispensable to have a public register of the names and progeny of those of an acknowledged superior race—the type to which the improvement of every other breed is to be attributed.

If we look to the East, we shall find that the birth of the Arab colt of noble blood was recorded with as much ceremony and care as that of the child.

England has long had its Stud-book. The date of the first edition is 1791. It contains a list of all the horses of pure blood that have existed, or are at present to be found in Great Britain.

Prussia has published, during the last three years, a list of the thorough-bred horses imported or born in that kingdom. Mecklenburgh had previously set the example. It is six years since a record of this kind was first kept there.

France had remained strangely in the rear of her neighbours; nevertheless, there were several talented men employed in the amelioration of the horse in that country, who had long felt the utility and necessity of collecting all the scattered elements—the unknown and unappreciated riches of their country—in order

to form the basis of a correct register of the animals of pure blood, instead of having to search at random through the records of years long past, and in which no definite principle, no rational system was adopted. They wished for, they at length demanded, the formation of *a Stud-book*. Their prayer was granted, and the government, convinced of the utility of such a work, appointed a commission to collect the materials, and to determine the right of inscription. Many events of a political nature, and which so frequently changed the character of the administration, long retarded the full accomplishment of the project; but, at length, *the French Stud-book* was completed.

It consists of an octavo volume of about 500 pages, and costing seven francs, in which are inscribed the names of 215 stallions of pure English blood, imported into France, or born there; 266 Arabs, Barbs, Persian or Turkish horses; 274 English mares also of pure blood; and 41 Eastern mares. Their progeny is also traced so far as it was practicable. This beautiful and useful work will form an epoch in the equestrian annals of France. It is more complete than the German works of a similar character, which are confined to stallions and mares imported from England, and a continuation of the genealogies of the breeds most esteemed in Germany.

In a late number of one of the French journals, after the long list of horses of pure blood, it is remarked that there is no portion of Continental Europe so rich in this division of national wealth. The English breeder, to whom so much of this is to be traced, may well be proud; but it may behove him to consider what may or will be the inevitable result, if the English horse, as many suppose to be the fact, is suffered to acquire a different and deteriorated character.

The Estimation of the English Horse among the German Breeders.

"The English race-horse is as good as ever, or perhaps he is improved.

"The hunter and the horse of general service is somewhat deteriorated, because the English blood is not now refreshed by the noble oriental blood, and because they exact from their young horses labours to which their strength is not equal. They also supply their colts with too substantial nourishment, and which is more calculated to increase their height and bulk than to give them spirit and vigour. The present English breed ought to be occasionally crossed with the oriental one, that a race may be

produced for general use, in which strength and endurance are more invariably united."

These are the recorded opinions of M. de Hochstetter, the superintendent of the Prussian studs, and of the Count de Veltheim, well known for his writings on the horse.—*Valeant quantum valere possunt.*

Purchases of English thorough-bred Horses for the German Studs.

The German papers announce that fifty stallions, mares, colts, and fillies, were landed at Hamburg on the 31st of last October, having been purchased in England for the German studs by M. G. Lichtwald; among them are thirty-two horses of pure blood, including *Olympus* by *Blacklock*, *Flare-up* by *Lamplighter*, *Amesbury* by *Phantom*, *Bacchus* by *Whalebone*, *Gilder* by *Velocipede*, *The Shah* by *Sultan*, *Cornet* by *Emilius*, *Christal* by *Chateaux Margaux*, *Nosegay* by *Emilius*, *Agnes* by *Bizarre*, *Lady Blanche* by *Bobadil*, &c. &c.

It may be seen by these purchases, made by the governments, the breeders, and even by the rich speculators of continental Europe, what importance they are placing on the amelioration of the breed of horses, and how unanimous they are in the means which they adopt for this purpose. The number of English horses imported on the continent during the last ten years almost exceeds belief; and during the latter part of this period, the undisguised object has been, the improvement of the native breeds.

The foreign journalist, from whom we extract this adds, with great *naiveté*—we thank him for the hint, and a most important one it is, but not altogether in the sense in which he means it—"the English do well in profiting by the circumstances of the present hour; for a very short time only will elapse before every continental state will possess, and to as great an extent as it could wish, the elements of the improvement of their respective breeds."

The French Studs.

The following account of the distribution of the French thorough-bred covering stallions, and some of the breeding mares, through the studs in various parts of France during the present spring, may not be uninteresting. The reader will acknowledge many an old acquaintance; it will also be seen to what extent the French government is identifying itself with the improvement of the breed of horses. It is a noble example, and, so far as the difference in the political constitution of the two states will admit, deserves to be followed.

HARAS DU PIN.—*Paradox, Laocoon, Dangerous, Vanloo, Napoleon,* and *Glocester,* half bred.

POMPADOUR.—*Terror, Mansourah, Pickle, Brunette,* and her filley.

ROSIERES.—*Hableur, Old Whisker.*

TARBES.—*Skirmisher, Rapid, Coverdale, Homer, Dardanus, Young Bedlamite, Decurion, Compère, Annibal, Bannialeu, Farmer, Flamingo, Florimel, Firman, Friedland, Forban, Felton, Grenadier.*

PAU.—*Young Antar, Sancho, Heraclitus, Hyacynth, Ibrahim, Fashionable.*

LANGONNET.—*Anglesea.*

ABBEVILLE.—*Cardigan, Oberton, Cerberus, Brougham.*

CLUNY.—*Waxy, Chance, Radius.*

SAINT LÔ.—*Sonnant, Jason, Fortuné, Alterater, Young Vandycke, Young Symmetry.*

JUSSEY.—*Gil Blas.*

AURILLAC.—*Mameluke.*

BRAISNE.—*Marino, Horace, Freluquet.*

SAINT MAIXENT.—*Amadis, Dandolo, Cosseir, Mago, Obligeant, Phaéton, Quisama, Oscar.*

PARIS.—*Young Emilius, Windcliffe, Vestris, Lottery,* and *Selim,* an Arab stallion.

ARLES.—*Humerus.*

RODES.—*Epervier.*

STRASBOURG.—*Beverley, Merino.*

ANGERS.—*Champion,* son of *France, Hamus.*

LIBOURNE.—*Gascon.*

At VIROFLAY, *Felix* and *Hercules* will be found, and *Royal Oak* and *Ibrahim* at SABLONVILLE.

A LIST OF VETERINARY STUDENTS WHO HAVE OBTAINED THEIR DIPLOMAS SINCE THE LAST REPORT.

March 26, 1838.

Mr. J. P. W. Hausman, Hanover.
— T. Gregory, Arundel.
— T. Lowe, Binton, near Stratford-on-Avon.

TO CORRESPONDENTS.

We have received a paper in continuation of a very interesting and important subject: but as the writer makes some free and severe remarks on the writings of others, we must, in accordance with the plan on which "The Veterinarian" has been conducted, request, in confidence, the favour of his name and address. His letter shall then appear in our next number.

ties opening into it) and was attached anteriorly to the diaphragm, and laterally to the abdomen, for several inches around in every direction, and contained the remains of a fine fœtus, now reduced, in a great measure, merely to bones and a little putrid matter, &c. The sac thus formed by a part of the uterus was, inside, in an apparently diseased state, being necessarily of a darkish colour, in consequence of the uterus firmly grasping the bones, and injured by their rough projections, as it was completely wedged full. The remainder of its coats were sound, and not much thickened. There were attachments pretty freely formed on its outer or peritoneal coat with the small intestines and thin mesentery, but they were sound. All other parts were sound; and she weighed 16lb a quarter, and was very tolerable meat.

Observations.—This ewe ought to have yeaned two years ago, the beginning of last year, as it was well known by the owner that she was in lamb, that her time was up, and that he saw her uneasy as for yeaning; and he says he has no doubt that if he had gone to her assistance she would have yeaned.

Such cases are curious, and shew us more strongly what we are continually seeing—the great efforts nature sometimes makes to get rid of anything that is injurious.

If I had laid wider open the orifice, I should have easily extracted the fœtus at once, and there would not have been the least danger, as the abdominal cavity would have been avoided.

Was the contracted state of the portion of the neck, &c. of the uterus existing at the full period of utero-gestation? If so, she would have been disabled from yeaning; or was it in consequence of the union formed with the diaphragm and abdomen, and thus leaving it upon the stretch, the expulsive action of the uterus having subsided?

It may not, perhaps, be uninteresting to insert the following, on the subject of extra-uterine fœtation, as it bears strongly thereon:—

CÆSAREAN OPERATION FOR THE REMOVAL OF A FŒTUS, FOURTEEN MONTHS AFTER CONCEPTION.

In the volume of *The Lancet* for 1835 and 1836, vol. 1st, is a case of the above description, related by a Mr. Hutchinson to the London Medical Society. "The fœtus was as large as an ordinary fœtus at the full time of utero-gestation, and the cuticle was entire, except over the scalp." In the discussion on the case, in the following number, Dr. Ramsbottom (who was called in to the case) observes (see his corrected speech, page 266), "that he was only acquainted with five cases reported in our language, in which an extra-uterine fœtus had been extracted by

operation through the abdominal parietes, and that none of those cases had occurred in Britain (here he mentions the cases); one case were twins, and both removed at the same time. In none of these cases was the fœtus removed so early as Mr. Hutchinson's case; eighteen, twenty-four, and twenty-eight months elapsing from the time of conception. Dr. R. observes, that the "child dies as soon as the natural term of gestation expires. When death of the fœtus takes place, attempts are made by the uterus to get rid of the fœtus, although the fœtus is not contained within the uterus: during these pains or efforts of the uterus, membranes are discharged, and with them some fluid, but not the waters of the amnion." He continues: "I have personally known ten cases of extra-uterine conception, besides the one under consideration;—four of the patients died from rupture of the sac, as evinced by dissection: three of these were tubal, the most frequent form of all the varieties, and the other parietal, or as the French call it, 'interstitial;' in which the ovum is lodged within that portion of the fallopian tube which traverses the parietes of the uterus. Three women died during the process of ulceration, established for the purpose of getting rid of the putrid mass, and three have recovered; two after the evacuation of the fœtal body, piecemeal, *per rectum*, and the last* who had the fœtus remaining within her when I last saw her (having conceived twenty years ago), and who has, to my knowledge, borne three children since she became the subject of this irregular species of gestation."

Dr. R. remarked, that "out of 40 cases where the Cæsarian operation had been performed in this country, only three cases had been successful, and one was by an ignorant midwife. In France they have been more successful, in consequence of the operation being performed more early, and when the patients were not exhausted, but more able to bear the shock."

* The reporter says, "he quotes from 'Burn's Midwifery,' that in this example the sac remains entire, and the child may be retained many years, as cases are on record to bear testimony; from the parts becoming hard, and being retained within the abdomen for the space of twenty, thirty, and even fifty years; and notwithstanding this, the menses may return, and the woman conceive again."

THE COMPARATIVE EFFECT OF THE ACTUAL CAUTERY AND THE SETON.

By Nimrod.

[Continued from vol. x, p. 600.]

Of the degree of pain caused by the seton, I am little able to form a judgment; but when I have seen a country farrier inserting a rowel, made of something like what forms the sole of my shoe, and with a hole in the centre of it, under the skin of a horse, and afterwards seen the quantity of *pus* issuing through this hole,—not being ignorant, from self-experience of the suffering which the formation of pus creates,—I have endeavoured to calculate the amount of the animal's suffering, and I confess I set it down at a good round sum. As to the directions for the operation, quoted by Mr. Mayer, jun. from Gervase Markham, they are enough to spoil a man's stomach for his dinner to read them, much less to witness the flaying, the thrusting, the beating, the blowing, the moving, the stitching, and the drawing, which he describes. Nevertheless, as inflammation of one part is, we know, diminished by producing it in another, I by no means wish to undervalue even the old rowel as a counter-irritant, and for which purposes, as regards certain parts of *the body* of the horse, was it alone used. Its effect, as a promoter of absorption, was, I believe, never dreamt of, consequently it never travelled below the body. In fact, had my old acquaintance, William Griffiths, on whom I built my faith in my juvenile days, considering him a sort of Doctor Bailey in the land, been asked to put a rowel—now called a seton—into the hock of a horse for a bone-spavin, he would have considered the asker a madman. However, it is of little avail to recur to such an ignoramus, compared with the present state of the veterinary profession, as this person was; and although I am very well aware of the fact, that it is impossible to establish any general theory in medicine, or to be sure of curing disease on any general principles, still, the relative utility of those which are employed cannot be too minutely discussed, and therefore I shall trouble you with a few observations on the *pros* and *cons* of your correspondents, as regard the comparative effects of the actual cautery and the seton. I am compelled to adopt this plan, from my inability to say much of the latter from my own personal experience. I used it in both cheeks of a big grey horse, which went blind when on my Yorkshire tour, the relief produced by them being temporary; and two or three times with

cart horses, inclined to have big legs; but with bone-spavins, splents, sinew strains, or through the frog, never.

I commence, of course, with the very able essay of Mr. Mayer, jun., "on the actual cautery and seton, and the utility of each in veterinary surgery."

Passing from ancient to modern practitioners, and those of the first rank, Mr. Mayer admits the fact, that, in many cases, whatever seeming cruelty may attend the operation of firing, it is indispensable as a counter-irritant, an absorbent, a destroyer of ossified matter (exostosis, as Mr. Percivall classically denotes it), a restorer of ligaments and tendons, and an artificial bandage. Well, surely, we have a *panacea* here, which was not to be found in the blister or the caustic, neither of which, he says, would reach the cause. Again; I was much pleased with the following sentence respecting the former, *the blister*, in which, it will be recollected, I had long ceased to place much faith. "Blisters," says Mr. Mayer, "were often found to be of no benefit, sometimes occasioning a great deal of sympathetic irritation, with increased pain, and no diminution of lameness; at other times not producing counter-irritation sufficient to reach the cause*.

Now, then, Mr. Mayer commences with the seton as a substitute, and by the words "from this period we may date its revival," I conclude he means the substitute of the newly-practised operation of setoning, for the old and obsolete one of rowelling; and also that to the instrumentality of Mr. Sewell, your highly-talented President, is the credit of the revival of this system of operative veterinary surgery due.

Well, now comes the result. Mr. Mayer tells us, the plan was adopted, and recommended in almost every disease of both body and limbs: all appeared to be going on smoothly, and "the whole profession seemed hushed like nature before a thunder-storm." But the question is, how long did this silence continue, or, rather, what caused its interruption? the seton having been, as Mr. Mayer tells us, before the profession some years, and they having had time to give it a fair trial! Why, I fear, Mr. Mayer himself will be found to answer this question in the very same page in which these assertions are made, and the one that follows it. *The balance of his experiments are in favour of the cautery, and, I regret to say, very considerably so.*

But let us hear what he says as to the relative utility of the two

* The only dead horse I ever had dragged out of my stable, was a pioneer horse I purchased of the Rev. Mr. Lowndes, in Bedfordshire, for 130 guineas, who died of inflamed lungs. He was twice severely blistered, without the smallest effect. The actual cautery was recommended; but I said—"No; let him die," and he did die.

systems, in particular cases, and this is a most interesting point. He considers the seton a *mild* counter-irritant, and, to a certain extent, a promoter of absorption. Its *great* use, he says (observe *I* put these epithets in italics), appears to lie in diminishing inflammation by the secretion of pus. It may, therefore, he continues, be advantageously employed in the early stages of spasm, curb, thorough-pin, joint capsular lameness, and after the operation of subcutaneous periosteotomy. It is also, he adds, of considerable utility in recent strains of the shoulder or hip; in diseases of the elbow and stifle joint; and should always be had recourse to in those cases. Now, to every word of this I yield my unqualified assent. It may be—it is—successfully resorted to in all those cases, and let us hope, if it be the milder operation of the two, that it ever will be resorted to when available; but, where is the remedy for the broken-down leg? where the reason for the abandonment of the firing-iron? Certainly not in this essay of Mr. Mayer's, nor to be even conceived from either his opinions or his practice. His concluding remarks, however, on their respective results, are equally creditable to him as a man of science and humanity. The actual cautery, he says, is a *powerful* counter-irritant, and a promoter of absorption, and for this cause it is *much to be depended upon* for the cure of exostosis, chronic lameness generally, and enlargement of joints; still he leaves it to the practitioner to have recourse to it only when milder means—the seton of course—are not likely to succeed. Implicit reliance on the seton is not to be found here; and I venture to say, "wo be to the veterinary surgeon who brings his firing-irons to London in his trunk, and deposits them as mere relics of his art."

I conclude my observations on this paper in a few more words. The advice of Vegetius, quoted by its author, is excellent; "give the fire," he says, "at needful times, with judgment and discretion." Now the "needful times" are those alone which experience has pointed out, namely, when the leg is in a fit state to receive the operation, and when there is reason to believe milder remedies would be of no avail. That of Mr. Mayer to the students, about to enter upon the duties of their profession, is, as regards the cautery, a mere echo of those words. "Place these two remedies," says he, "on your list; place the actual cautery *last*." He should, however, have added the trite conclusion to this much-used apophthegm—"*though not least*."

I next come to Mr. Sibbald, who claims the privilege of *seniores priores*, in having his "say" on this important point. Although I could wish this gentleman had informed us what

proportion his practice of the seton bore to his forty years' use of the firing-iron, still both his inquiries and his experience, as far as they have gone, leave a large balance in favour of the iron. His mention of the latter to the inflamed chest, makes me regret that I had not applied it to my deceased Pioneer horse, already alluded to; although I have the comfortable reflection, that it was from a disinclination to torturing him that I declined the advice—not that, in the state he was in, do I now think the suffering would have been great, for the second blister did not rise at all.

Mr. Thomas Turner next addresses the Association, and on the very best ground, making the subject a question of comparative value and effect; and which, although we know him to be a strenuous advocate for the iron, he expresses a wish should be dispassionately discussed. But with what a sweeping clause does he commence his oration! The Surrey sportsmen often ask him, he says, why he fires their horses, when the heads of his profession seton those placed under their care? Now mark his answer! "Because," says he, "in many of the lamenesses to which horses, and *your* horses especially, are subject, I cannot do without it." Then, with regard to the sprain of the back sinews—the flexor tendons—the theca, and the surrounding parts so thickened as to form a kind of convexity well known to all acquainted with the horse—*the broken-down leg*—that is only to be braced by a vigorous application of the cautery, and penetration of the integument." He now, after greatly strengthening my hypothesis, that the operation of firing is not so severe as it appears to be—and these are his words—proceeds to the seton, to which, as also to Mr. Sewell, as the introducer of it, he allows much merit, although not in injuries to which he has referred. Here he emphatically asserts, that the seton does not, *cannot* produce a tithe part of the effect of deep firing, and here I shall leave Mr. Thomas Turner for the present.

I now find an M.D. (Dr. Billing) mingling in the debate, and admitting, that whatever may be the difference in the practice of the veterinary and the human surgeon, depending on some difference of anatomy and physiology, there can be none in principle. The doctor, however, prefaces his remarks by a confession, that he has not been accustomed to the treatment of horses, although, he says, many of the *donkeys* of this world had occasionally come under his care (their time for being fired is, perhaps, yet to come!), consequently what he advances on this subject must be considered as mere speculation. At the same time, as I myself am equally at sea as to the effect of his moxa on the human

frame, I shall pass over this evidence with merely observing that the bias leans towards hot iron rather than to cold steel—at all events towards fire.

Mr. Simonds commences cautiously, and very properly observes that the merits and demerits of either operation cannot be decided in one discussion. Like a man of sense, however, he then proceeds at once to results; and, after admitting the superiority, at all events the efficiency, of the seton, in a few certain cases, strikes a fearful balance in favour of the iron. In fact, he all but condemns the seton *in toto* as a substitute for the actual cautery.

Mr. E. Braby acknowledges the importance of the subject in debate, and gives the result of his experience, which is greatly in favour of the iron, for all cases of lameness; allowing credit to the seton in acute disorders of the body, which I imagine every one admits to be its due.

Mr. Hutchinson speaks only of the bone spavin, but speaks very boldly;—I should be inclined to say, too boldly. He says he had *horses* (query, how many?) under his care with spavin, which he had fired in the *usual* way (query again, what is the "usual way"?) without any good effect. He then had recourse to the seton, and *they became sound.* Here we have a triumph for the seton, and I rejoice much at it; for I was not aware that horses could be thus cured, wholesale, of what I have hitherto considered one of the most incurable diseases to which they are subject; and it is, unfortunately, by no means an uncommon one.

Note.—If the reader will turn to article "Burning," in the Encyclopædia Britannica, he will see some curious facts of the effects of fire on the human body—such as in the cure of colic, violent head-ach, swollen legs, &c.

We next find Mr. Spooner—high authority—complimenting Mr. Mayer on his essay, but, with the diffidence that invariably accompanies first-rate talent, declining to jump at any conclusion on the points at issue. The merits of each are, however, very clearly stated. The cautery, he says, is *considered*, and as such have I ever considered it, a powerful counter-irritant, a local depletive, and eventually a mechanical bandage. The seton, he tells us, is advocated as a counter-irritant, and more especially as a depletive; but with regard to its effects as a bandage he believes it to have no advocates. Here, then, it would appear, that the balance at once is in favour of the actual cautery, the benefits being in proportion of three to two. This delusion, however, if Mr. Spooner's theory be correct, is soon dispelled; for we are almost immediately informed, and this on the result

of much post-mortem examination, that its effect as a bandage is only ideal! The comparison, then, rests merely between their effects;—both are counter-irritants, both depletives: the question is, which of the two is most effectually such? The answer to this I am unable to furnish; but I confess I reluctantly bow, even to such authority as Mr. Spooner's, when he denies the effect of the actual cautery as a bandage. Nothing, however, we know, is so hard as to unlearn; and we almost feel ashamed of having blundered through life in any palpable error, which, if Mr. Spooner is correct, has been the case with myself, and with thousands of other much wiser men, the late Mr. Field of the number.

Mr. Spooner now proceeds to a very material point, touching the comparative advantages of the two operations in question; and this is—the time required for their respective effects to tell, as well as to shew that, as regards those of the seton, its occasional failure is intimately connected with this very point. In the many cases in which my opinion has been asked respecting the necessity or non-necessity of having a hunter fired, I have always insisted on two points, whenever the operation has been determined upon: first, the preparation of the horse, and, consequently, his leg, previous to its being performed; and, secondly, plenty of time and *quiet* to the limb afterwards. Now, to the sportsman, the mere consideration of time is not so very important. If a sinew case, he of course throws up his horse for the season, and hence the desideratum is at his command; and if it be only a splent, or incipient bone-spavin, a dose or two of mild physic, at the end of a month after the operation—should the disease shew itself early in the winter—brings his nag into work again, fit to finish the season. But as regards the owner of horses, whose only means of keeping them at all arise from the produce of their labours, it is, as the French say, "une autre chose." Now, Mr. Spooner tells us, the little *apparent* remedial injury that is done to horses by setoning them is the cause of their being taken again into work, much sooner than those that have been fired; and it is on this account that the seton may occasionally appear to have failed. This objection to the operation, however, can always be obviated by the operator firmly insisting on a certain period of rest, according with existing circumstances; but I will say, that if Mr. Spooner has found out that less time is required, after the operation of setoning, than after that of the iron, to give full effect to it, a very great point has been gained. Still, I am inclined to think that in this particular it would be a neck-and-neck race between the iron and the steel, and, as far as road-work is concerned, I think I could name the winner; I have seen many coach-horses put

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ANIMAL PATHOLOGY.

By Mr. YOUATT.

LECTURE XVIII.

Caution as to the presence of Straw in the Stomach of the rabid Dog.—Rabies in the Human Subject.—Occasional arrest of the Symptoms.—The Identity of Rabies in Man and the Brute—Hydrophobia in Man.—The Difference in the Disease a very natural one.—The Post-mortem Appearances in Man and the Brute.—The true Character of Rabies—a nervous Affection.—The particular Portions of the System most affected.

I RETURN to that interesting, fearful subject, rabies. I am thankful to an old pupil, who reminds me that I forgot a caution as to the ingesta of the stomach of the dog that is rarely or never released from his kennel, and which I used to impress on my class. One of the most decisive post-mortem proofs of rabies in the dog is the presence of a mingled mass of hair and straw and dung and filth. But it is necessary that *all* these things should be present. Nature has given to the dog an effectual mode of unloading his stomach and bowels by swallowing a portion of rough-leaved grass. A part of it is soon vomited from the irritation of the stomach, occasioned by the sharp points and edges of the grass; and the remaining portion, passing through the intestinal canal, produces in the same way an evacuation of its contents. The yard-dog is unable to get at this mechanical evacuant; and, instead of it, he swallows a portion, and sometimes a very considerable one, of the straw of his bed, mixed occasionally with his own hair. The egesta from the stomach and bowels will therefore be sometimes composed almost entirely of these matters. I used to state two instances in which a great deal of temporary unhappiness was occasioned by medical gentlemen interfering more in our practice than they ought to do, and mistaking this natural and useful physic for the depraved appetite of rabies. The dog that is not chained up cannot always

get at grass, and will devour straw instead of it; you will, therefore, look for the fæces, or other extraneous matter mingled with the straw, before you will dream of the existence of rabies. Some of my house pupils will recollect the amusing blunder of a very great man on this point. It became a little teazing at last on account of the foolish obstinacy with which he maintained his error.

Rabies in the Human Being.—Our subject will hardly be complete without a slight and hesitating glance at the symptoms during life, and the post-mortem appearances of this disease, in the human being.

The presence of the virus seems for awhile to produce little irritation in the bitten part, and the wound rapidly or more slowly heals, according to its size or situation or the constitution of the patient: but after an uncertain period of time there is uneasiness, inflammation of the bitten part, occasionally re-opening of the wound, a distressing feeling of lassitude, a dread of some undefined evil, a peculiar irritability of temper against which the patient in vain struggles, a singularly altered expression of countenance, the impression of which rarely forgotten, and occasionally, of itself, it is sufficiently indicative of the nature of the disease. The irritability increases; there is not a sound or a motion that does not startle the patient. Presently various imaginary objects of interest or terror present themselves. He watches the course of some fancied intruder. He seeks or he avoids him. Every motion is performed with a hurried start, and an uncertainty of effect. The delirium possesses a strangely characteristic peculiarity. The sufferer is altogether lost for awhile—he is surrounded by persons far, far away—he converses with them of things long gone by: but the charm is curiously broken in an instant. A word—the slightest sound is sufficient to recall him to himself, although it is only to wander again the next instant. He is oppressed with viscid saliva, which adheres to the fauces, and which, with the most violent efforts, he strives to throw from him.

Practical Development of the Disease.—There is one circumstance of which mention is made in the records of human medicine, but it is of exceedingly rare occurrence; for the number of cases of rabies in the human being are few compared with those of other diseases, and in the dog, the proportion of deaths from this horrible malady is greater than he who has not been accustomed to the treatment of these animals would think to be possible. Two girls were bitten by the same dog. One of them died hydrophobous. The other soon afterwards exhibited the same premonitory symptoms as her sister—heaviness—general indisposition—excessive irritability succeeding to this, and even some fear of water. These alarming presages, however, were of

short duration—she became gradually calm and composed, and on the following day she was herself again.

In the course of six-and-twenty years, having had occasion to see at least two thousand rabid dogs, I have witnessed something like this, half a dozen times or more, in animals sent to my hospital after having been bitten, and to be kept there until the time of danger was past. I have seen the anxious licking of the bitten part—the suspicious countenance, the increased irritability, the wandering eye—nay, I have heard the very howl; and I have been assured that rabies was establishing itself, and that the dog would die: but, in less than twelve hours, all had passed away, and that animal never afterwards exhibited one symptom of rabies. I mention this, not as having any thing unaccountable about it, for every animal poison may, in like manner, be introduced into the frame in sufficient quantity for awhile to derange the system, but not to produce its full and destructive effect, but I refer to it as an encouragement to persist in our remedial measures, even after the partial development of the disease; and also as a probable explanation of some of those cases in which hydrophobia has appeared to yield to medicine.

Identity of the Disease in Man and the Brute.—I have stated enough to prove the similarity, or rather identity, of the disease in these two classes of patients: but I must not forget the hydrophobia or dread of water—of invariable occurrence in the human being, and but seldom observed in the brute. It is, however, occasionally seen in all our quadruped patients. I have described it in the dog, the horse, cattle, sheep and swine. The difference, then, is in its occasional, instead of its constant exhibition. If, however, it were a symptom constantly observed in man, and never found in the dog, would that prove an essential difference of disease? Are we to expect that the same symptoms shall always accompany the same disorder in every animal? Is not the difference in the same disease, dependent on difference of structure and destination, that which makes the study of comparative pathology so interesting and so useful? The inflammatory fever of cattle and sheep often runs its course in two or three hours. The hoven of cattle is unlike tympanitis in any other animal. Indigestion in the horse bears little resemblance to repletion or over-distention of the stomach in other patients. Psora or mange in the horse, the dog, and the sheep are exceedingly unlike. Affections of the chest, and their symptoms, duration, and termination are often extremely dissimilar in the bibed and the quadruped, and in different quadrupeds.

Not only do the symptoms of disease vary, but some animals are subject to certain maladies from which others are exempt.

The horse has glanders, farcy, grease, and periodical ophthalmia. The mule has rarely, and the ass never has strangles; and both of them escape the torture of contracted feet. Cattle, sheep, dogs, swine, know not any of these complaints. The human being has, peculiar to himself, variola, scarlatina, and syphilis. Need we, then, wonder that there should be considerable dissimilarity between rabies in the human being and the brute?

These hydrophobic symptoms in man have been known to accompany other diseases, besides rabies. They depend upon an irritable state of the fauces and larynx. They depend upon the power of imagination. That faculty often imposes strange delusions upon us. A gentleman was bitten by his dog. The animal immediately disappeared, and could no where be found. The owner suffered this to make a fearful impression on his mind, and at the expiration of four days he was ill a-bed, and with well-marked hydrophobia. His life was despaired of. On the fifth day of the disease the dog returned. He was let into his master's chamber. He jumped upon the bed and caressed him as usual, and every symptom of hydrophobia disappeared in a moment.

The Difference in the Disease in these beings a very natural one.—I used to take more pains than probably were needed to account for this difference of symptoms. A few papers on rabies, published in the 1st and 2d volume of THE VETERINARIAN, were collected into a little pamphlet in 1830. To that I beg to refer you, only stating now that there is inflammation of the larynx in the great majority of cases of rabies both in man and the brute: but from the more important function of the larynx in the human being it possesses a superior degree of sensibility. It is the principal organ of voice, every intonation of which, every expression of thought, although partly modified by the mechanism of the fauces and the mouth, depends chiefly on the structure and exquisite sensibility of the larynx. The voice of the quadruped is infinitely more confined; and every expression of intelligence and feeling is more simple. Besides, in the quadruped, for wise and good reasons, a peculiar mechanism is superadded to the larynx, by which the ideas and the wishes of the animal are chiefly expressed. Great sensibility of the larynx is therefore not only unnecessary but would be a nuisance. The comparative anatomist and physiologist would expect to find this precise difference of symptoms in rabies as it attacked the human being and the inferior animal. Still there is sufficient identification of malady in the involuntary and peculiar howl of the dog; the choaking noise attendant on each respiration, and the blush of inflammation, more or less intense, which every dissection presents.

The Post-mortem appearances in Man and the Brute.—I address

myself to this point with some hesitation and real diffidence. I would not say one word to displease our elder brethren of the human profession, for I respect them, and am indebted to them: but when they tell me that, in a great majority of cases in the human being, not the slightest trace of disease can be found in the thoracic or abdominal viscera, and only the usual characteristics of phrenitis in the cerebrum, I must not dare to contradict them, but I cannot help saying that I marvel much. When, however, they also assert that the appearances which I have described in the last two lectures, and which I regard as conclusive evidences of the real nature of the disease, are rarely or never seen in the dog, I can only say that I wish they would favour us with their presence at some of our post-mortem dissections of these animals, and we would convince them that they are quite mistaken.

I find in the second volume of "The Provincial Medical and Surgical Association" so accurate a delineation, with the exception of the larynx, of what I have been accustomed to find in a great majority of cases in the dog, and so exact an account of what I used—in my great ignorance I was told—to expect to see in the human being, that I will transcribe them both, with very many thanks to Mr. Grindrod, as faithful representations of many of the post-mortem lesions of rabies in man and the dog. I will take the dog first.

Post-mortem Appearances of Rabies in the Dog.—"The lungs were of a rosy colour, but their structure was healthy. The quantity of mucus in the bronchial tubes was small. The mouth was healthy, but very parched. The whole of the pharynx was of a deep rosy colour, which terminated in a defined line immediately opposite the cricoïd cartilages. The larynx was healthy. A considerable vascularity was manifest at the lower part of the œsophagus, and was continued into the stomach. On opening the stomach, a mass of substance was observed, which certainly had the external appearance of a bird's nest. On being separated, it was found to consist of straw, wood, leather, &c. These materials were in a remarkably dry state. On being removed, the mucous membrane was found to be covered on many parts with tough mucus. The rugæ were particularly manifest, and upon the surface were observed, here and there, intense inflammatory patches, and in other places black or dark brown streaks, which in a few hours became more perceptible. The external surface of the stomach seemed to be healthy. The par vagum and nerves of the tongue were perfectly healthy. The salivary glands were of the usual colour and size."

Post-mortem Appearances in the Man that was bitten by this Dog.—"The supra-orbitar and nasal branches of the fifth pair of

nerves, which supplied the parts bitten by the dog, were apparently healthy. In the brain and its membranes no morbid appearances were detected. The vessels were unusually healthy, and the cortical substance was rather paler than usual. The spinal cord and its tunics did not present any deviation from healthy structure. The heart was remarkably firm and contracted, and contained no blood. The lungs were of a dark colour in some parts, and in others more of a rosy hue. The mucous membrane of the trachea, immediately before its bifurcation, was highly vascular. The submaxillary and sublingual glands were much enlarged.

"On opening the pharynx, it was evident that this part had been much affected during life. The greater part of its inner surface was intensely inflamed, and terminated in a defined line opposite to the cricoïd cartilages. The *velum pendulum palati* and most parts of the pharynx shewed great development of the mucous glands. The tonsils were slightly enlarged. The œsophagus was greatly inflamed near its termination, and in one part the mucous membrane was slightly abraded. The whole mucous membrane was so softened that the slightest touch of the scalpel separated it.

"The stomach was remarkably contracted, and completely empty. Intense inflammatory patches were seen on the rugæ, which were very much developed. The mucus was very thick, and in some parts of an unusually deep colour. On one of the rugæ was observed a dark spot about the size of a small shot. The stomach appeared healthy between the rugæ, but had in some places a darker colour than natural. The mucous membrane of the duodenum also displayed intense inflammation, and the *glandulæ solitariæ* were exceedingly enlarged, and very numerous. The whole of the nervous system was remarkably developed, and the ganglia of the sympathetic were larger and of a deeper colour than usual."

The true Character of Rabies.—We are now enabled to form some notion of the actual nature and character of this dreadful disease. *It is a state of excessive nervous irritation, by which the system is ultimately exhausted.* The nervous excitation commences probably from the very moment that the wound is inflicted, or the saliva of the rabid animal has been brought into contact with some denuded surface. Although the wound or the sore may heal, there is some action set up either of an inflammatory nature, by which the tissue undergoes a gradual process of irritation, so that it is at length induced to respond to the morbific influence continually exerted upon it—or it is so debilitated, that it can no longer oppose resistance to the

deadly poison—or, by some morbid secretory action, the fatal virus has increased in quantity as well as in power. From the moment of the bite this morbid action must be going forward, and should be considered as a powerful incentive, after any lapse of time, before the constitutional affection has taken place, to endeavour to destroy the focus of mischief.

The particular System most affected.—At length, at a period differing most materially in different patients (two horses were bitten by the same dog, but one of them became rabid three weeks before the other) at a certain indefinite period, the animal betrays incipient illness—he is dull—his appetite fails—the general constitution is affected—empoisoned—and the effect of the poison shews that the tissue which is chiefly attacked belongs to the nerves. There is rarely more than a very slight degree of *fever*. It is a nervous affection, extending to every system, but more particularly connected with the motor nerves of organic life, and of the cerebrum. Let us glance for a moment at the systems that are most affected. Take the head and face: the strabismus, which we almost always may perceive in the early stage of rabies, shews some affection of one or more of the motor nerves of the eye on that side. If more than one is affected, it is not in an equal degree, and hence the principle of antagonism is lost among them. Here the fifth pair of nerves is involved.

A most singular affection of the ball of the eye has been noticed. First there is a peculiar, or almost intolerable brightness of the eye, probably arising from some intense influence on the hyaloïd membrane, from the branch of the fifth pair of nerves, which is directed to the eye; but this excessive influence seems to be soon exhausted, for the eye not only returns to its former hue and expression, but, immediately after that, it becomes dull and wasted—in fact, it changes into a perfectly disorganized mass. The life and nourishment conveyed through the influence of that nerve being suspended, the eye collapses, and shrinks away.

We have another illustration of loss of power in the fifth pair of nerves—the temporal, masseter, and buccinator muscles lose their power, and we have the dumb variety of madness—the open mouth and protruded tongue, and the tongue principally protruded on account of the withdrawal of the support which was afforded it by the lips and mouth. Oftenest in ferocious madness, but occasionally in the dumb variety, we have spasmodic action of the seventh pair on various parts of the face, and with or without much distortion of the muscles. This sometimes gives a truly frightful appearance to the countenance of the rabid horse. Almost every branch of the great spinal organic nerves is involved. Immediately anterior is *the glosso-pharyngeus*, which is

evidently involved. It may have something to do with the protrusion of the tongue, but it has far more to do with the dreadful affection of the fauces which we find in many dogs. It acts not only as a motor nerve, but as one of the excitor ones, if the new theory of Dr. Marshall Hall is admitted.

In the perverted action of the superior, and inferior or recurrent laryngeal branches, of the great spinal organic, or pneumogastric, we recognize many of the most dreadful symptoms of rabies in the quadruped—the involuntary howling—the husky, grating inspiration—the frequent inflammation of the trachea, and the uniform one of some part of the glottis in the quadruped, and the characteristic and horrible access of hydrophobia in the human being. In the morbid action of the nerves of the pulmonary plexus we find sufficient illustration of the laborious action of the lungs and the peculiar inflammation of the pleura; while, to the influence of the gastric nerves is to be traced the constant and often intense inflammation of the stomach.

These nerves anastomose freely with the cerebral nerves, and therefore cerebral affection soon occurs. There is a state of general and extreme excitation—a very peculiar wandering and delirium, and, in some animals, fits of savage and uncontrollable ferocity; but few post-mortem lesions of these are observed.

All these nerves unite and blend with the ganglial ones, and thence proceed altered secretion generally; a morbid secretion of the gastric juice, occasioning the strangely perverted appetite of the dog; and a still more depraved one of the saliva, converting that bland and innocuous fluid into the direst poison.

But I will not detain you longer with this anatomical delineation. It was, however, necessary to place this subject on its proper footing. Rabies in the brute, and hydrophobia in the human being, may be occasionally accompanied by a considerable degree of febrile excitement; *but they are essentially of a nervous character.* The nervous system is irritated, and finally exhausted, by some morbific agent. What that agent is, or what is the cause of rabies, will form the subject of our next lecture, and a more important one the whole circle of veterinary pathology does not contain. I shall endeavour to bring to it a candid spirit of inquiry; but it is one of those fundamental points on which it behoves the veterinary instructor to deliver his opinion freely and unhesitatingly.

A CASE OF RAMOLLISSEMENT OF THE CEREBELLUM IN A HORSE.

By M. U. Leblanc, M.V., *Paris.*

The brain of the horse is much less developed than that of man, and its functions are far less important; it ought, therefore, to be more rarely diseased. This is actually the case.

Thus, true cerebral apoplexy, and softening of the brain, are extremely rare in the horse. The symptoms which indicate them are also little known, and we do not find any of them well described in our recognized veterinary works. The pathologists who have touched on the subject have had nothing to assist them but a small number of facts collected with difficulty. I am here referring to facts relative to true cerebral apoplexy; that is to say, hemorrhage that has its seat in the very substance of the brain. Examples of ramollissement of the brain without hemorrhage are yet more rare. It is on this last account that I am not willing that my brethren should lose the opportunity of studying a case which has come under my personal observation.

On the 20th of August, 1837, a bay coach-horse, five years old, had recovered about fifteen days from strangles that had run its regular course. He was in good condition, fed well, and had regained his ordinary spirits. He had eaten his ordinary meal with appetite, and seemed to be in perfect health, when he suddenly fell on his right side, as if he had been thunderstruck. He was constantly looking towards his left flank, and he seemed to be intensely regarding it, so that the grooms thought that he was seized with a fit of colic. They endeavoured to raise him, which they accomplished with great difficulty; but he immediately fell again on the same side. The head groom, who was much accustomed to sick horses, informed me that his breathing was much accelerated—that he rested his head on the left side of his withers—that his eyes were fixed, and that from time to time all four limbs were stiffened. He readily drank some water which they presented to him.

In my absence and that of the proprietor of the stable, the head groom bled him at the jugular, to the amount of about six pounds. He told me that he had opened the two saphenas, but could only obtain a few drops of blood from them.

I did not see the horse until one o'clock of the morning of the 21st. He was still lying on the right side, with his head stretched more than usual before him, but occasionally he bent his head and neck towards the left. The eyes were open and fixed—the limbs stretched and yet flexible—the body covered

with a hot perspiration—the breathing laborious, sighing, irregular, but in general quick; the pulsations at the artery were difficult to count—they were from 70 to 80 per minute. The horse, when left to himself on his well-littered bed, and in a horizontal position, was continually changing his place as he pawed with his feet, and moved round from the left to the right. The fore legs were oftener and more violently moved than the hind ones. From the time that he fell he had not dunged, although many injections had been thrown up.

I endeavoured in vain to raise him. He seemed to feel no pain from the blows of the pitchfork, which were applied to various parts of him: yet at every blow his limbs and his neck contracted as if he had experienced an electrical shock, or as if, being in a manner dead, we had excited the spinal cord, or some of the nerves proceeding from it.

I attempted a new bleeding at the jugular and the coccygeal arteries, but did not obtain more than a pint and a half of blood. The arterial blood was of a deep red colour: the venous blood was nearly black, and very thick; it ran more slowly than the arterial blood, although the orifice in the vein was much larger than that in the artery. I again administered injections of soap and water.

At eight o'clock in the morning the horse was in the same state, except that his sensibility was still more weakened, as were also the muscular contractions.

I administered two ounces of aloes, and the juice of four large onions* in a bottle of water. The drink fell down the œsophagus as through a mechanical and not a living canula.

During the whole of the 21st and 22d there was no other change in the symptoms than increasing diminution of nervous power and of muscular contractions. There had not yet been any evacuation.

On the morning of the 23d he died without any convulsions. He was opened almost immediately after death. The thoracic and abdominal viscera appeared to be perfectly healthy. The alimentary tube contained well-digested food, of its usual appearance and consistence; the outside of the brain was sound, and, when that organ was cut, no lesion was discovered.

* The juice of the onions was administered at the request of the owner, who regarded it as a very active and prompt evacuant. He very often used this remedy, he told me, when any of his horses appeared to be too much *blown out*; and when they had eaten too much, or their stools were not so frequent as in health. He believed that he had prevented many attacks of indigestion by the administration of the juice of the onion. He also gave it, and he thought with advantage, in cases of colic.

The cause of all the symptoms which I have described and of the death of the animal was found in the cerebellum. Towards the median line of that body, in the thick part of its substance, between the ventricle and its superior surface, and extending through the whole length of the organ, was a winding cavity of many compartments, almost isolated, filled with a substance of a white or slightly yellow colour, and of the consistence of pus. The walls were somewhat less firm than the remaining portion of the cerebellum, but their colour was not altered. I could not find any trace of hemorrhage either in this softened substance or in the encephalic mass generally. The vessels were not even injected.

This case is remarkable in the triple relation of the seat of the ramollissement, its extent, and the almost complete discolouration of the softened cerebral mass.

If this ramollissement had been accompanied or caused by any hemorrhage, that hemorrhage could not have been very great, for the duration of the illness was not sufficiently long to permit any great quantity of blood to be absorbed. That which appeared to me to prove that the hemorrhage could not have been very considerable even if it existed at all, was, that the dissolved substance exactly filled the cavity in which it was found.

I should also remark, that during life this horse had not exhibited that excessive sensibility which I remarked in another patient that died of inflammation of the cerebellum.

Finally, there was no excitation of the genital organs, or erection of the penis. After all, it is very probable that the softening of the nervous centres might have taken place without any inflammation preceding or accompanying it, and without hemorrhage. On this ground we can explain the serious nature of the lesion, and the non-effect of every medicine that was resorted to.

Journal des Haras.

We are aware of but one other recorded case of ramollissement of the cerebellum, and that we extract from the *Recueil de Med. Vet.* for 1825. It is related by M. Ollivier, of St. Maximin.

Being requested to visit a young horse that had suddenly dropped when at work, I found him dead. The owner gave me the following account of him. That he had begun to work him in a cart at three years old; that he was at first full of spirits, threw himself honestly into the collar, and was in excellent condition. After some months, however, he began to get too fat, and somewhat lazy. One day his appetite seemed to fail, nevertheless he was put to his usual work. He hung his head, crept slowly and listlessly along, and even a severe application of the whip would scarcely make him quicken his pace. On the following day he

was in the same state, yet still he was harnessed to the cart; he had not, however, gone far ere he suddenly fell, struggled a little, and died.

On opening the cranium with considerable care, I found the substance of the cerebellum much softened; it was quite pultaceous, and there was an effusion of mingled pus and blood in the ventricle. The membranes of the brain were slightly injected; the mucous membrane of the stomach and of the small intestines was also somewhat inflamed: every other organ was perfectly healthy.

M. Ollivier makes the following remarks on the case:—"There is much analogy between the cerebral lesions in this animal and those frequently observed in the human being. I am aware that ramollissement of the brain in the human being runs its course more slowly than it seemed to do in the case which I have described; but who knows whether this animal that died so suddenly, had not presented many symptoms of ramollissement of the cerebellum, which had escaped the attention of the owner and his men? The change, so far as I could obtain a history of the case, was sudden—the intellect of the animal was enfeebled, and also his sensibility. I know that, in the human being, softening of the brain is announced by an acute and obstinate headach, and by some derangement of the sensitive functions. This continues during a longer or shorter period of time, and then the individual suddenly or gradually loses the use of some of his limbs, or of one side of the body, and ultimately perishes many months after the commencement of the disease. To this I reply, that not having obtained an account of any other symptoms than those which I have described, I must be content with them; and, having such imperfect data, I pretend not to have discovered any new disease. The rapid progress of the disease might have induced me to consider it as a case of sanguineous apoplexy; but the absence of the lesions uniformly connected with that malady, and the alteration in the very substance of the brain, compel me to regard it as a case, and I believe the first on record, of ramollissement of the cerebellum in the horse."

M. Serres relates a case of it in a monkey. See *Magendie's Journal*, vol. ii, p. 265.

Ramollissement of the cerebrum, however, is not unfrequent in our patients. Professor Hertwig, of Berlin, states that, in at least a hundred cases he has found the brain very soft, dirty, yellow, and with fluid in the ventricles after sleepy staggers, and there are few of us who have not seen the inflammatory softening after phrenitis. In the sheep with turnsick, softening of a great portion of the brain is not unfrequent; but cases of ramollissement of the cerebellum are very rare. Can any of our correspondents throw a little light on this subject? Y.

ON THE TREATMENT OF PLEURISY AND HYDROTHORAX.

By Mr. Cupiss, *Diss, Norfolk.*

I have perused the article on "Paracentesis Thoracis," &c. by Mr. Alexander Black, of the 14th Light Dragoons, with much attention and pleasure; and the profession in general will, I am sure, feel equally obliged with myself to this gentleman, who has kindly laid before the public his mode of treating so important a disease as hydrothorax. I wish it to be clearly understood, that the remarks which I am about to make are offered not in the spirit of controversy, but rather as following Mr. B.'s example, and with the expectation that others may be induced to submit to our notice their course of proceeding.

I do most cordially agree with Mr. Black on the necessity of an early abstraction of the fluid in hydrothorax: but it appears to me that his treatment has not been sufficiently decisive in the commencement of the inflammatory attack of the lungs and their investing membranes. It is then that the disease may be combatted with the greatest chance of success, and the effusion of fluid and the consequent surgical operation prevented. In my humble opinion, Mr. B., in the three cases detailed, has not carried his treatment of the active inflammation to sufficient extent.

When called to a case of inflammation of the lungs, accompanied with all the usual symptoms, I would bleed until the pulse had risen and fallen again, or as much as I dared without producing syncope. This I would follow up by the administration of a ball containing aloes ʒiij, resin ʒvij, digitalis ʒi. This would produce great nausea, relax the bowels, and operate pretty freely on the urinary organs. If at the end of six or eight hours the pulse had resumed its rapidity, I would again open the vein, and bleed until the action of the heart was effectually reduced. This second bloodletting, if performed after a short interval, I have generally found to produce a decidedly good effect. In eighteen or twenty-four hours from the exhibition of the ball, I would repeat the digitalis and resin; to which, if *purging* had ensued, I would add a sufficient quantity of tinct. opii in a drink. External irritants would of course be resorted to.

In some obstinate cases I have given the extract of belladonna with advantage, taking care to repeat the resin daily; for, next to bleeding, our sheet-anchor is diuretics. This we must especially bear in mind; for if the urinary organs are healthy, and will allow of our acting on them with impunity, we possess an earnest

of ultimate success; but if disease previously exists there, I have invariably found death to be the consequence. Nitre cannot be depended upon as an effective diuretic; and as a febrifuge it is of incomparably less value than a medicine that will speedily and powerfully effect a formation of urine. Tartar emetic is, I think, unable to afford us that prompt relief which the urgency of the case requires, for I have given it both in small doses continued some time, and, for experiment, in the large quantity of 4 oz. at once, without producing any effect of which I could avail myself at a critical moment; and its combination with nitre will prove of little service where the employment of efficient agents is indicated.

Mr. Black very justly lays great stress on the free administration of tonics after the operation; but I must differ from him as to the medicines employed. Capsicum and ginger afford a very necessary stimulus to the stomach; but to that their effect is limited. Gentian and cascarilla may be considered tonics, but of far inferior power to the carbonate or sulphate of iron, or the sulphate of copper, either of which I prefer. Modern chemistry, however, has furnished us with the ioduret of iron, which, in doses of from one to two scruples two or three times a-day, with ʒij of ginger, is the best tonic I have yet met with.

I have made these observations not with the intention of representing my treatment as the better of the two, but merely to place before the reader a course of procedure which, during fourteen years' practice, I have pursued with almost uniform success. Occasionally, from a complication of disease, or too long delay (for the country practitioner has generally to contend with a disease of three or four days' standing), I have been unable to prevent hydrothorax.

With the full assurance that this will be read with the same good feeling as that in which it is written, I remain,

Your's truly, F. C.

ON THE EXPANSION OF HORSES' FEET, IN REPLY TO MR. MORGAN.

By Mr. C. Clark, *London.*

Sir,—It appears that Mr. Caleb Morgan is unwilling to rest satisfied with the answer I made to his former communication in *The Lancet;* but, after a six weeks' silence, when the arguments I adduced are in some measure forgotten, he comes forward again, to maintain the non-expansion of the horse's foot, to complain of my inexperience, and the sharpness with which I have used him; and to state, in his defence, that he "did not seek

the controversy." But, let me ask, Sir, if any one who seriously denies an admitted doctrine in your pages ought to be surprised or offended at a reply from those who publicly support it? Whatever Mr. Morgan might expect, he may be assured that no one shall openly attack the principles that I advocate without hearing from me in answer; at the same time, it is by no means an agreeable task to refute a grave, point blank assertion by argument alone; and I even suspect, if a liberal journal had existed in Harvey's days, and any one had chosen directly to contradict the theory of the circulation, using good language, and appealing to the *experience* or rather the ignorance of his predecessors, that it would have required some time and pains to answer him to the satisfaction of the public. Thus, although the expansion of the horse's foot has been heretofore admitted in *The Lancet*, the world at large are certainly not acquainted with it; and Mr. Morgan is secure from general censure, and meets with some believers, because his assertions fall in with established prejudice and received opinion. To comment at large upon the manner in which he has met my queries would occupy too much of your valuable space. He admits that horses' feet are much wider when they come from grass than before, and because "they grow outwards." Now, why do they not "grow outwards" when shod, for it is notorious that with common shoes they *contract* and grow in? and, on the contrary, I can prove, by numerous feet, that with expansion shoes they grow to the natural width, and maintain it. What occasions this difference? In the latter case, the foot both grows and dilates naturally; in the former, its action and growth are impeded. It is a practical fact, observed by all the workmen, that feet, when shod with these shoes, furnish twice as much horn at the heels as before, and there is yet no instance of a horse becoming weak-heeled during their use. My second query he also admits in this manner, "that horses' shoes become bright at the heels, *immediately under* the crust, but not one *atom* beyond it," (observe,) "which would be the case did this contractile and expansive power really exist." No, it would not be the case: did I not say, "rubbed bright by the *ineffectual* attempts of the foot to expand in spite of the nails?" and are we not both speaking of a common shoe, in which I say, the nails confine the foot's action? In the very next paragraph he says, "the nails are always placed sufficiently in the forepart of the foot to admit of this contraction and dilatation, did they exist." Altogether, these passages strengthen, so far as his opinion *can* strengthen, what I said respecting the futility of placing the nails forward, under the idea of allowing motion to the heels; for though he says they are "always suffi-

ciently forward to admit of this," he still denies that an *atom* of lateral motion takes place in consequence. Yet, though his arguments second mine, he follows the example of "Nimrod," in calling it "stuff about the nails," simply, it seems, because he cannot comprehend it; and speaks of the nails in the quarters confining the expansion shoe, not knowing that the point of action in the foot is at the toe, and that the sides move outwards, as it were, by halves.

My third question, unpleasant as it is to Mr. Morgan, I must beg leave to repeat. "Has he never applied his thumb and finger to the heels of a well-worn expansion shoe, and seen the shoe and foot collapsing and expanding together under the operation?" His angry answer is, "No, nor did any other man!" "Remember, when the judgment's weak, the prejudice is strong." To have replied for himself would have been quite sufficient, since all may not be equally wilful, and this simple trial, so easy and conclusive, is within the reach of all. If Mr. Caleb Morgan *will* blindfold himself, and then declare there is no light, he may remain perfectly self-satisfied in possession of his own opinion, but is exposed to the ridicule of all the world who use their eyes. However, after denying that he has ever made this trial, he gives us some ground to doubt it, by seriously attempting to dispute its value. For if, he states, the foot be forcibly compressed, and afterwards, on being released, resumes its natural width, it no more proves the expansive nature of this organ, than the same experiment, performed on the human knuckles, proves that they are constantly dilating and collapsing. And are they not doing so? This gentleman's perceptions *must* be dull, if he cannot see his hand before him! But, though this attempt to seek for analogy is unfortunate, I will challenge him to try again, and find, if he can, an instance, in the feet or extremities of any animal in nature, where a considerable and obvious share of expansive action does not exist. Yet this quality, so general and so indispensable, he would deny to the foot of the horse! though it is not, he says, "a block of granite," but "a horny box, or covering, to the sensible parts *of which the foot is attached;*" a definition which to me is incomprehensible.

What follows is a mutilated version of Mr. Coleman's nonsense, with respect to the frog and its *upward action,* which he cannot demonstrate; while to common sense it is plain, that an organ destined to receive the weight of the horse must be yielding and expansive, the proper qualities of the frog not resisting, by any upward movement, the downward pressure from above. But the grand object of this gentleman's long letter, having but little to urge against my statements, is to depreciate the principle

of expansion, by stating, that the shoe is not new, and, to give an air of research and discovery to his remarks, would send you on a bootless errand to the British Museum, to consult the sage volume of old Gueriniere, when the purpose would have been equally well answered by our own more ancient English writers, Blundeville and De Grey, who, with all the farriery writers of that period, describe and figure the shoe for all feet, which is thus commented on by Mr. B. Clark, in first promulgating these doctrines:—

"The shoe itself I do not claim as any novelty, for it is often seen hanging, as a curiosity, against the walls of forges, and has been called, by some, the hunting shoe, being, as it was said, sometimes taken into the field by the huntsman, and if any shoe came off, and was lost during the sport, this supplied its place; possessing the power of dilating and contracting, it fitted all, if a village smith could but be found to nail it on. It is not, therefore, the shoe itself, but the new principle for its application that I claim, and the discovery of the real structure and habits of the hoof which indicate its necessity."—*Stereoplea*, p. 37.

Also, in his History of the Horse, p. 35, speaking of Blundeville's book, he says,—

"He has also given a shoe with a lap-joint, rivetted by a small iron pin, in case of a lost shoe, and to accommodate different feet, and recommends gentlemen learning to nail a shoe on, in order to use it, observing that, in Germany, it was the practice so to do with those who were very fond of riding, so that it was intended merely as a resource, to be removed as soon as a proper shoe, or smith, could be found; indeed, such a shoe could not be worn many days, if not many hours, without coming asunder. No principle of elasticity in the foot being known, it was, in fact, hanging against the walls as a mere curiosity*."

This candour, on the part of Mr. Clark, renders Mr. Morgan's remarks unnecessary; and we should not forget, also, that a real meritorious discoverer is not a man who accidentally uses a thing for an occasional purpose, and lays it aside, but one who employs it upon principle, discovers and demonstrates the necessity of its application, and makes it, in short, "*practically useful.*" Were this not admitted by general consent, we should have no scale of merit, and those who hazard assertions without proof, and do things by mere chance, would rank before the enlightened discoverer. Respecting the expansion of the horse's foot, it would

* This shoe *was* usually made with a double row of nails on each side, that it might, with more certainty, fit all feet, and it was also very light and unfit for permanent application.—C. C.

appear, from the amazing difficulty that Mr. Morgan finds in understanding it, even when pointed out to him, that the disclosure of it must have been a laborious effort, on the part of Mr. Clark, to overcome his original prejudices and preconceived notions, though it is only the discovery of a natural principle in the foot, which had been overlooked before. Your correspondent has advanced no new arguments, but seems inclined to abide by his experiments with the calipers, which I shewed to be inconclusive as to the final question, and to set at nought all the facts which anatomy, analogy, and even common observation, furnish to prove the expansion of the foot. His last letter is chiefly composed of ungracious terms applied to me, for having, very naturally, defended my own cause when attacked in *The Lancet*, and, of course, with that warmth which it is every man's duty to feel on such an occasion. But Mr. Morgan has overshot the mark, and proclaimed his own weakness, in charging me with being "*acrimonious, virulent*, or *splenetic*," and that I *slur*, *vilify*, or *vituperate* his means or motives. These epithets belong not to my communication, and are too much like the common-place weapons of a hired advocate in a bad cause, who, in the absence of argument, clamours loudly about the intemperance of his adversary, in order to draw off public attention from the facts he has stated. There is no ground in my letter for these malevolent imputations. He pretends to account for this asserted "acrimonious violence," by the contempt which he unluckily evinced for theorists and book-makers, &c. Now, in what manner this contempt was to affect me, who never committed the sin of writing a book, I am quite at a loss to imagine; and, as a theorist, though I will not deny acting on principle, and can render sufficient reason for what I do, still I am a practical shoeing-smith, and can execute my own orders if necessary, and therefore, so far as making and nailing on a horse's shoe go, am perhaps less of a theorist than Mr. Morgan.

One more word, Sir, and I have done. He says that my name is not to be found in the list of College Veterinary Surgeons. It is true, that I have not got a piece of paper from Mr. Coleman and his medical friends (whom he has so repeatedly asserted can never make good practitioners), because, in the present degraded state of the College, this ticket is considered, among men of judgment, as a disgrace. Were I disposed to fool away twenty guineas, I know where the paltry affair is to be got at any time, but never will seek it while the present mode of instruction exists, or submit to be catechised by men of another profession. For a time the word *college* commanded respect, but the failure of all Mr. Coleman's *patents*, and the singular fact, that the pecu-

liar theories which he enforces with most weight and vehemence, and which may be found floating in the brain and hanging on the tongue of every full-fledged pupil, are almost uniformly true when exactly reversed*; these things have at length produced their natural effects on the public mind. Let me not, by any means, offend the respected and established practitioner, to whom I appeal for the truth of these statements, and who knows that he cannot, and never has been able to, practise the major part of Mr. Coleman's doctrines. Such as it is now, a diploma is not merely a negative good, but a positive injury to a young practitioner. I, for one, will not be supposed to derive my qualifications from such a source as St. Pancras School.

Lancet.

It certainly was not our intention to have inserted this letter. Mr. Morgan was the person attacked—he had retired from the field, and it was not usual, after that, to permit the challenger to prance it over the lists in vain and unmeaning defiance. Besides, we thought that Mr. Clark had, in this letter, plainly asserted some things, and *insinuated* others which, on reflection, he would rather wish to have withdrawn from the public eye. There is no accounting for tastes. His demand is complied with.

As to his private letter to ourselves, in which he says, "As the case stands at present in your pages, Mr. Morgan is left with the last word of the argument, which I will never allow to any one who denies the principle of expansion to the foot of the horse—therefore I claim from you, as a truth-seeking journalist, that the whole may appear without any garbling or concealment—if otherwise, I shall understand your motives, and proceed accordingly"—we regard this with the contempt that it deserves.

As to "the expansion of horses' feet," in which we believe as firmly as he does, and as to the progress of veterinary science, which we have quite as much at heart as himself, we must beg to tell him, and all these outrageously violent spirits, that

Non tali auxilio, nec defensoribus istis, tempus eget. Y.

* If this singular assertion is doubted, I am ready to undertake the proof of it in a concise, straightforward manner.—C. C.

ON THE EFFECTS OF THE INTRODUCTION OF AIR INTO THE VEINS OF LIVING ANIMALS.

The Royal Academy of Medicine at Paris has been lately employed in the discussion of this most important pathological and physiological subject. A summary of the debate, and the conclusions at which the Society arrived, may not be uninteresting to our readers. We condense it from that valuable periodical *Recueil de Médécine Vétérinaire.*

The fatal effects of the introduction of air into the veins has long been known among veterinary surgeons. The forcing of atmospheric air into the vessels that carry black blood, for the purpose of destroying the animal, is of considerable standing. It is spoken of by Tissot in 1768, and by Morgagni in 1787. Chabert, in his Treatise on Glanders, published in 1787, speaks also of the injection of air into the jugulars, and recommends it as the surest and most expeditious way of destroying an animal. He prefers it to all other methods of accomplishing this object, because it effects no other change in the viscera than distention of the parietes of the heart, and consequently enables us better to appreciate the lesions which were actually produced by the disease.

The phenomenon of the accidental introduction of air into a vein wounded in a surgical operation is a new fact in veterinary medicine. It was recorded for the first time by Professor Verrier, in the Compte-rendu of the Veterinary School of Alfort in 1806, and it occurred during the bleeding of a horse from the jugular.

The second occurrence of the same nature was in the practice of Mr. Bouley, jun. in 1819, and is published in the first volume of *Magendie's Physiological Journal.* We insert his account of it, as given at a late sitting of "The Academy of Medicine."

"I was desired in 1819 to examine the horse of a person in the Isle of St. Louis, which was beginning to be attacked with pneumonia. Judging it necessary to bleed him, I opened the left jugular vein in the usual way. There was nothing in the operation which could afford cause of alarm. The opening was large, and in perfect relation with that of the vein; the blood flowed readily in one regular stream, and without any jerk in the current *(sans saccades).* In a word, I repeat it, there was no cause of alarm.

"The vessel into which the blood flowed not being large enough to hold the full quantity which I intended to abstract, I sent it away by my assistant, in order that it might be emptied, and withdrew my pressure on the portion of the vein below the inci-

sion. I had scarcely turned myself round, when I heard a sort of gurgling like that of air rushing into a bottle while the liquid is poured out. I took little notice of it, for I had heard a similar sound many and many a time without any harm following, and, my assistant having returned, I continued the bleeding. After having filled a second vessel, I stopped the bleeding in the ordinary way; that is to say, by piercing the edges of the orifice with a pin, and twisting some of the hair from the mane round it. I then led the animal back to his stable, which was only a few paces distant.

"I had scarcely got him into the stable when he began to tremble all over—his respiration was laborious and plaintive—the pulse small, irregular, and quickened—he groaned deeply two or three times, and then fell on his litter as if he had been struck with lightning.

"I will not dissemble my affright at these unusual and alarming symptoms, and my apprehension that the animal would immediately expire. I had no doubt that his death would be attributed altogether to me, since I had advised the bleeding, and performed it myself. Nevertheless, in spite of my agitation, all the circumstances which had preceded and accompanied the bleeding rapidly presented themselves to my mind, and especially I recollected the noise which I had heard at the moment when I had ceased to press the vein. This was a sudden ray of light, and I felt assured that the whole was to be attributed to the introduction of air into the vein. I will confess that, at that time, I knew nothing more of the nature of the accident than I had read in Bichat's Treatise on "Life and Death." I recollected that that celebrated physiologist had asserted that a small quantity of air was sufficient to destroy the animal, and that he would die as soon as the blood charged with air reached the brain. Acting on this belief, which was an erroneous one, no doubt, (but we may be permitted to err with Bichat as our companion), I thought that another bleeding offered the only means of saving the animal; I hastened therefore to withdraw the pin, and to permit the escape of a new stream of blood. As it ran, the horse seemed to regain new life—he made several fruitless efforts to rise, and in five or six minutes after this new bleeding he accomplished it. When he was up, his pulse became sensibly developed, and lost its rapidity; the respiration was fuller, and less precipitated; and half an hour after the accident all danger had disappeared, and he was in the same state as before the first bleeding. A new, and very remarkable symptom, however, began to appear—the animal seemed to acquire an extreme degree of sensibility over the whole of the right side of the body (the opposite one to that on which he had been bled), accompanied by a most violent itching. He laid

himself down, and rolled over, and over and rubbed himself against every thing that would afford the slightest resistance.

"This singular phenomenon deserves the attention of the Academy. It confirmed the opinion of Bichat, and seemed to demonstrate that, in this case, the air had a peculiar effect on the left side of the brain. It is thus alone that we can explain the *singular hemiplegia* with which he was affected.

"As to the primitive disease—pneumonia—it pursued its usual course, and terminated favourably in about a month.

"I am inclined to draw the following conclusion from the case which I have just stated,—that when we bleed a horse from the jugular vein, we ought at the moment when we cease to compress the vein, to place the finger for a few seconds on the aperture, in order to give the superior column of blood time to fill the vacuum which has been made in the interior part of the vessel. By taking this precaution, I think that we should always avoid the accident which occurred to me, and which might be productive of the most injurious consequences, both to the veterinary surgeon and his patient."

There is a third case of this kind in a collection, yet unpublished, of practical facts, by M. Riss, of the Royal and Central Society of Agriculture. "After having extracted about 10 pounds of blood," says he, "at the moment when I withdrew the vessel that held it, and which at the same time had made the necessary pressure on the jugular, we heard a noise—a species of gurgling within the vein,—and we immediately afterwards saw a kind of bloody foam exuding from the orifice that had been made by the fleam. We immediately attributed it to the entrance of air into the jugular, and, instead of pinning up the orifice as I intended, I compressed the jugular anew, and took away about four pounds more of blood.

"Hitherto the animal did not appear to have suffered any injury, and I ordered him to be led back to the stable; but he had scarcely gone 40 or 50 paces before he suddenly stopped, staggered, fell, and began to beat himself with violence. He made several efforts to get up, but fell again immediately. Fearing that he would bruise himself sadly by these struggles, I caused him to be held as firmly down as possible.

"During the whole of this time—a quarter of an hour or more—his eyes rolled in their orbits; his flanks heaved violently; his breathing was loud and precipitate; his ears, muzzle, and extremities became cold; the testicles were retracted into the abdomen, and the pulse was scarcely perceptible.

"I ordered frequent ablutions of cold water over his head and scrotum, and employed several men in rubbing him well all over.

"By little and little the respiration became quieter and less

accelerated, the testes descended into the scrotum, the pulse began to be developed, and the horse was covered with perspiration. I then proposed to let him rise, which he did in a moment. He was led on to his stable; the sweat by degrees dried away, and an hour afterwards it was difficult to perceive that any thing had ailed him."

Such are the only three cases that have occurred in veterinary practice of accidents happening from the accidental introduction of air into the veins in surgical operations. In human surgery, however, these cases have been much more numerous. They have amounted to more than 30. Our space does not permit us to give a detailed history of any of these cases, and we will only say that, during some surgical operations on the superior part of the chest, and in the neighbourhood of large venous trunks, this introduction of air into the veins has occurred. It has always been accompanied by a kind of gurgling or of hissing, as when the air is admitted in small quantities into the cavity of an exhausted receiver, or, according to others, more resembling the sound when air is rushing through a small aperture in the chest of a living animal. We will add, that in every case, at the close of this noise, evidently occasioned by the rushing of air into the vein, some fearful symptoms have followed, such as plaintive cries, syncope, distortion of the eyes, extreme paleness, imperceptible pulse, suspended respiration, and that the succession of these symptoms has been strangely rapid, and the death sudden.

Surprised at these remarkable phenomena, produced by the penetration of air into the circulatory vessels, physiologists have engaged in various experiments, with a view to discover the mode of action of this fluid on the living tissue, and the organs which are so strangely affected by it. Treading in nearly the same path, the different experimentalists have arrived at strangely different conclusions.

Bichat, in his treatise "On Life and Death," maintains that the air introduced into the venous vessels destroys the functions of life by its direct action on the brain, and that the circulation is necessarily interrupted, because the cerebral influence is first suspended.

Nysten, on the contrary, after numerous experiments made in 1811 on this subject, arrived at the conclusion that the atmospheric air injected into the venous system of different animals, destroys them by causing an enormous distention of the pulmonary auricle and ventricle. When, however, a great quantity of air is introduced, the bronchial passages are embarrassed by its presence, and thence results cough, spumy expectoration, guttural breathing, death, and altered structure of the lungs.

M. Magendie attributes the death of the animal to the sudden cessation of the circulation, in consequence of the accumulation of air, and its rarefaction in the cavities of the heart, which it distends, and to the contraction of which it opposes itself.

M. Leroy D'Etrolles says that the air may cause death in three ways—by its influence on the brain, agreeably to Bichat's opinion, either affecting its sensibility, or acting upon it mechanically; or by its influence on the lungs, causing sudden emphysema of these organs; or by its influence on the heart, in depriving it of arterial blood. According to M. Picdagnel, death results from pulmonary emphysema.

M. Mercier thinks that the air, by reason of its compressibility, yields to the contractile powers of the right cavities, and occupies a smaller space; but that when these cavities begin to dilate, the air, acquiring its former volume, fills these cavities, and prevents the entrance of the blood; and thus the stagnation of the venous blood, and the interruption of the arterial circulation, are the causes of death.

Such was the unsatisfactory state of knowledge on this question when M. Amussat undertook some new experiments. The commission of the Academy likewise instituted a course of experiments, to the number of 40.

Twenty-nine were made on dogs, and had reference, first to the spontaneous introduction of air into the jugular, subclavian, and axillary veins; secondly, the introduction of this fluid into the venous vessels through the medium of a sound placed in one of them, and the air then introduced either by the natural expansion of the chest and the heart, or by artificial injection.

In both cases the subjects of the experiments were sometimes placed in a horizontal and sometimes a vertical position; and in both the one and the other, on animals sometimes debilitated and sometimes not, before the experiments.

After having stated the results of these experiments, varied in different ways, the reporter gives some details of the effect produced by the introduction of air previously breathed and procured from the human chest. He concludes by stating the effect of various experiments, attempted with a view to prevent the fatal result of the introduction of the air.

They experimented also on eleven horses, following pretty nearly the same courses. Their details will be given in a future number. Y.

THE EXCITO-MOTORY SYSTEM OF NERVES.

[We mean not to enter into the controversy which the introduction of this new and ingenious system of nervous action has occasioned; but the veterinary pupil should keep pace with the knowledge of the times. This system is nowhere more concisely or clearly stated than in a recent lecture by Dr. Marshall Hall, published in *The Lancet*.—Y.]

The functions of the cerebral system are, sensation, perception, judgment, volition, and voluntary motion. The sensations are conveyed to the cerebrum by the sentient nerves, the olfactory, the optic, the acoustic, the trifacial and posterior spinal. The cerebrum itself may be viewed as the organ on which the ψυχη sits, as it were, enthroned; the voluntary nerves convey the mandates of the volition to the muscles which are to be called into action. All these functions are strictly physical; they imply consciousness. Sensation without consciousness appears to me to be a contradiction in terms; the idea and the phraseology should be banished from physiology.

The cerebral system sleeps, sensation is dull, volition quiescent; dreams, &c. are the delirium of sleep.

How different from those which I have thus enumerated are the functions which belong to the true spinal marrow! In these there is no sensation, no volition, no consciousness, nothing physical. An impression is made upon the extremity of a nerve; this impression is conveyed, not to the cerebrum, but to some part of the medulla oblongata, or medulla spinalis, whence it is reflected upon certain muscles destined to be excited into consentaneous action. The true spinal system is independent of the cerebrum, and subsists when the cerebral lobes are removed. It guards, as it were, the orifices and exits of the body, regulating the ingesta and the egesta.

The cerebral system is the seat of the intellect; the true spinal marrow is, in an especial manner, the organ of the emotions and passions. It is on this part of the nervous system that the preservation of the individual and the continuation of the species depend. The cerebral system connects us with the external world in every thing that relates to sensation and volition, or mind; the true spinal system, in every thing that relates to the appropriation of its materials, and of their expulsion; in every thing that, in those respects, relates to nutrition and reproduction.

The true spinal marrow, as distinguished from the *cord* of cerebral, sentient, and voluntary *nerves*, with which it is inseparably blended in structure, is the centre or axis of a distinct system of excitor and motor nerves hitherto unknown to physiologists.

This excito-motory system of nerves presides over ingestion and exclusion, over retention and egestion, and over the orifices and sphincters of the animal frame. It is, therefore, the nervous system of respiration and deglutition, and of the retention and expulsion of the fæces and urine, and of the semen.

By means of this system, that "*tourbillon*" of the ingesta and egesta, so beautifully and eloquently described by Cuvier, is effected. By means of this system, the animal frame is constituted a casket, guarded at the upper part, and securely closed at the lower. The excito-motory, or true spinal system, is the nervous agent in all those *motions* hitherto confessedly not understood, by the fact of their being designated by the unmeaning term *sympathetic*, &c.

This system is also the source of *tone* in the whole muscular system.

The true spinal system is, in a peculiar sense, the seat or nervous agent of the appetites and passions. Through it the emotions effect not the expressions of the countenance and the respiration alone, but the pharynx, the larynx, the sphincters, the expulsors, and indeed the whole muscular system of the animal frame.

The true spinal system is susceptible of *modification* by volition, and, on this account, some of its functions have been denominated *mixed*. It is, also, constantly under a certain influence of the volition, as is manifest in the difference in the respiration, &c. during intense mental attention, sleep, and coma, and in ordinary circumstances.

The true spinal system *never sleeps;* respiration and deglutition, and the action of the orifices and sphincters, are continued.

That a principle so extensive and important in the animal economy should not have been detected and known before, must appear extraordinary; and that such is the fact, may be demonstrated by considering the most simple and familiar examples of the functions over which this principle presides. Has it been stated in any work, antient or modern, that the deglutition of water by the pharynx, the exclusion of carbonic acid by the larynx, the retention of the urine and fæces by the sphincters, are exclusively functions of the *spinal marrow*, and of a peculiar *system* of *excitor* and *motor* nerves, of which it is the centre, or axis?

Nay, the idea of a system of *excitor* nerves, constantly operating on the animal economy, preserving its orifices open, its sphincters closed, and constituting the *primum mobile* of the important function of respiration, I believe to be new. The acts are so familiar to us, that we have thought them understood, when the nervous agents through which they have been *excited* have not even been detected; yet, that this view is the true one, is proved by the most decisive experiments.

GLANDERS SUPERVENING ON VIOLENT CONTUSIONS OVER THE CAVITIES OF THE NOSE.

By M. Riss, *Veterinary Surgeon in Chief to the First Regiment of Hussars.*

CASE I.—GLANDERS AFTER A FALL ON THE ANTERIOR PART OF THE HEAD.

A mare, of English breed, six years old, ridden by her owner, and gallopped nearly at full speed, fell on her head, on April 24, 1831. She was immediately led to the barracks. I saw her about an hour after the accident. She still looked quite frightened, and had several slight contused wounds on her forehead and along the nasal bones. There were some streaks of coagulated blood on the inner surface of the ala of the right nostril, and the pituitary membrane on that side was very red. The pulse was full and hard. I abstracted seven pounds of blood from the jugular, and ordered cold ablutions to the head, with water and half-rations of hay.

On the following day, and for several days afterwards, nothing appeared to be the matter with her.

May 3.—Eight days after the accident the groom pointed out to me a slight discharge from the right nostril. It was limpid, white, and mixed with streaks of blood. The submaxillary glands were slightly enlarged, and tender. The pituitary membrane on that side was more than usually pale. The animal, nevertheless, had a good appetite, the coat was smooth, and she was in high spirits.

All these symptoms made me augur badly of the coming evil. I imparted my fears to the proprietor, and told him that there was every appearance of confirmed glanders.

In effect, in despite of our treatment, the nasal discharge became permanent, more consistent, yellow, and adhering to the orifice of the nostril. The right submaxillary glands became larger, harder, and less tender, and the pituitary membrane continued pale.

She was ultimately destroyed.

CASE II.—A SIMILAR ACCIDENT.

July 4, 1831.—A bay-chestnut horse, six years old, fell violently on the anterior part of his head during a charge. The blood ran in a stream from the right nostril, but the hemorrhage was not of long continuance, and stopped spontaneously. He was led to the infirmary, and bled to the extent of nine pounds; he also had white water, and half-rations of hay.

July 8.—To-day—a fortnight after the accident—there appa-

rently remaining no symptom of illness, and we were thinking of sending him back to the ranks, when we perceived a very slight, white, adhesive discharge from the right nostril, and the sublingual glands on that side were engorged and tender. He also, in despite of treatment, became worse and worse, and was destroyed on the 19th of September.

CASE III.—CONCUSSION ON THE FOREHEAD.

Two mares, six and seven years old, gallopping at full speed in opposite directions, came against each other with so much violence, that they were both knocked backwards, and lay for awhile on the ground without motion and without life.

By little and little they recovered from their stupor. The first had a slight wound on the anterior part of the forehead, and about two or three inches in circumference. Both bled profusely from the nose, and the one that had the wound bled from both nostrils;—in the other the hemorrhage did not commence until a quarter of an hour after the accident, and then it was from the left nostril only. It stopped spontaneously in both of them. They were both placed in the infirmary, and treated as in Case I and II.

In the evening, Colonel Lory coming to inform himself of the state of these horses and of my opinion of them, I told him what I had generally seen to happen in similar cases, and particularly reminded him of the other two horses whose history has just been given. At the same time, however, I observed that every horse that had received similar contusions on the anterior part of the head had not become glandered.

The event justified both of my assertions; one of these mares became glandered, but the other never exhibited any symptom of that disease.

The first of them remained for some time in a sadly dispirited state; she ate very little food; she seemed to lose flesh every day, yet without presenting any symptom of definite disease. She continued in this emaciated state, notwithstanding all the care of the sub-officer to whom she belonged. Having returned to the ranks, she discharged her usual duty for two years, and until she was discharged on account of chronic lameness, but without the slightest symptom of glanders.

It was quite otherwise with the second mare. The morning after the accident; she had regained all her former gaiety and appetite, notwithstanding which, however, she was restricted in her diet during several days. She was kept in the infirmary twenty-two days after her fall; at the expiration of which period there was a white discharge from the left nostril, the sublingual glands on the same side were slightly enlarged and very tender, and the

pituitary membrane was of a livid pale character. She was kept under treatment during three months without avail, and then was destroyed.

CASE IV.—SLIGHT DEPRESSION OF THE FRONTAL BONE.

This horse, seven years old, was kicked in the forehead; a wound two inches in length was the result, and a slight depression of the frontal bone. There was also a slight hemorrhage from the right nostril. The depression of the frontal bone did not appear to have any thing dangerous about it, and nothing but cold water was applied, eight pounds of blood being abstracted.

On the eighteenth day after the accident, the first suspicious symptoms began to appear; and the horse, after undergoing the usual treatment for glanders, was destroyed at the expiration of two months. *Recueil.*

SCIRRHUS OF THE OS UTERI AND VAGINA IN A MARE TWENTY-FOUR YEARS OLD.

By M. Molin, *M.V., at Auxerre.*

A MARE, twenty-four years old, and beautifully proportioned, had been regularly sent every year to a neighbouring stud in order to be covered; she however continued barren in spite of every precaution. At twenty years old, the thought of breeding from her was quite abandoned.

She was one of the best working mares about the mill—her owner was a miller—but, at length, on account of her age, he placed in the shafts with her a colt twenty months old, which he had bred from another mare.

Twelve or fifteen months afterwards it was perceived that the old mare was fast increasing in size, that her teats swelled and contained milk, and he began to suspect that she was in foal. Four, five, and six months passed, and there was no appearance of parturition, although the extraordinary size of the belly and the movement of the fœtus left no doubt as to her real state.

I was consulted; and I confess that, after the whole tale was told, I found it extremely difficult to answer to the thousand questions that were put to me. The first idea that occurred to me, but which I kept to myself, was, that it was an extra-uterine conception, and I gave my opinion with a great deal of reserve.

Some days afterwards, evident labour pains shewed that the womb was endeavouring to expel the fœtus by the ordinary way; but no progress being made, I was sent for. It was midnight

when I arrived at the mill. I found the mare stretched on her litter, in great pain, and with a pulse quickened, hard, and full. I abstracted ten pounds of blood, and ordered injections of a decoction of linseed to be thrown into the vagina every half-hour. Her pains, of whatever description they were, soon ceased.

On the two following days she was a little uneasy from time to time, and refused all food.

The miller, to whom I had now communicated my fears as to the result, determined to bring the mare to my infirmary. She arrived, and immediately began to eat in her usual manner, without exhibiting the least symptom of pain. She remained in my stables twenty-four hours, and was then led back to the mill, apparently not at all distressed.

Three days more passed on, and there was very little alteration in her; and then, at midnight, I was disturbed by messengers from the mill telling me that the mare was voiding her bowels through the vagina. I lost no time in hastening to her, and on entering the stables was astonished to find her dead, and a great part of her small intestines spread over the litter. In order that nothing of this extraordinary case might escape me, I delayed to open her until the morning.

The uterus was of an enormous size, the body and horns of it forming one vast sac. It had penetrated into the chest through an enormous rupture of the diaphragm. This probably had been produced by her violent straining, and was the immediate cause of her death. Another rent appeared in the vagina, on the lower part of the left side near the symphysis pubis. It was through this aperture that the whole of the floating portion of the small intestines had escaped. The neck of this enormous matrix, in which was contained a fœtus weighing 140 lbs., had scarcely experienced any increased development. The os uteri and the vagina were of the same character and texture; they were altogether fibrous. They might, with tolerable ease, be divided lengthways; but, transversely, they altogether resisted the ordinary bistoury, and I was obliged to employ a butcher's knife in order to cut them.

This scirrhous transformation of the neck of the womb and of the vagina was evidently the cause of death, by opposing an insuperable obstacle to the escape of the fœtus, which on this account lived an *intra-uterine* life far beyond the natural time, and acquired this unusual size.

Recueil, Nov. 1837.

VOMITING IN AN OX.

By M. Santen.

Case I.— I was sent for to a farm belonging to M. Nairae to attend an ox that was affected with almost continual vomiting for fifteen days. During this time the animal had been under the care of an empiric, who had been drenching him with large doses of various oils—as linseed, walnut and olive oil; but the malady had not yielded to this treatment, which, in fact, did not seem at all suitable to such a case.

This ox was sadly out of condition, its eyes were deeply sunk in its head, the pulse feeble, and the walk staggering. When any food was set before him, he seized it with greediness, and masticated it well. As soon as he had eaten a certain quantity he suddenly stopped, and seemed to be exceedingly uneasy; the muscles of his belly contracted—he stretched out his neck—the food began to ascend the gullet, but in much larger quantities—it filled his mouth and dropped to the ground. Portion after portion rapidly followed, until he had got rid of nearly all that he had eaten. He immediately began to eat anew, and as heartily as if he were in perfect health, until the sickness again returned. It was the same with liquids, except that they were sooner discharged, and ejected to a considerable distance. Proper rumination was altogether suspended. I could not discover any probable cause for this complaint, and the animal was so rapidly wasting away, that I feared its almost immediate death.

I administered a drink composed of an infusion of wild mint, not being able to get any of the garden-mint, and to every two bottles of the infusion I added an ounce of camphor, suspended in a sufficient quantity of vinegar: I was afraid that it would have been immediately rejected, but this did not happen, and therefore I began to entertain some hope of a cure.

Three hours afterwards I ordered a little hay to be given to the animal. He ate it, and it was not returned. We then gave him some water whitened with rye-meal, which he drank and retained, and presently he began to ruminate the food which he had taken. On the following morning the drink was repeated, and at two hours afterwards a little more hay than on the preceding evening was given, and after that some white water was placed before him. He again began to ruminate. The farmer, pleased with this improvement, gave him a large quantity of food which was eaten, but a portion of it was soon returned. When I was told of this, I remonstrated with the farmer on his imprudence, especially as

I had cautioned him against giving too much food. Another drink of the same kind was administered in the evening.

On the third day another was given, and in the course of the day he was permitted to eat a fair quantity of food. He retained it, and ruminated well. The sickness did not return, but the animal recovered his health and condition, and was soon sent to his usual work.

Case II.—M. Coste desired me to examine a cow that had been employed in drawing wood from the mountain. The driver observed that she had not her usual spirits, and no sooner was she released from the yoke than she began to vomit. The sickness continued during two hours, and she ejected a prodigious quantity of food. At the end of that time her belly was considerably diminished in size, and her flanks had quite fallen in. Besides this there was another symptom which surprised me much; her left ear hung down as if it were suddenly paralyzed, and the animal was also blind on the same side. The upper eyelid was relaxed and engorged, but the globe of the eye was as transparent as in its most healthy state. The animal searched for something to eat, but rejected it the moment she had swallowed it.

I administered about three pints of an infusion of peppermint, to which I added six drachms of camphor, dissolved in a sufficient quantity of vinegar. The drink remained on her stomach. Two hours afterwards we gave her a small portion of food: she ate it, but it was almost immediately returned. I then gave her the same quantity of infusion of peppermnit with eight drachms of camphor. Three hours afterwards we gave her a little more hay. She ate it eagerly, and ruminated once. At the expiration of another three hours more food was given to her, but it was rejected within ten minutes after it had reached the paunch. At night a third drink was given, and soon afterwards a little hay. It was eaten and well ruminated.

On the morrow a little more food was given to her at her first meal; a quarter of an hour had scarcely passed when a small portion of it was returned by vomit. A drink, resembling those of the preceding day, was administered; and at the expiration of four hours food was set before her, which she ate, and was sick no more.

I often went to see her after this; her ear resumed its natural position, and her eye recovered its perfect sensibility to light. I should have observed that I had not employed any medical means to either the one or the other. During the disease the incisor teeth became black and loose: the farmer thought that the medicine had caused this. I could not be of that opinion, although I confessed that I was not able to account for the circumstance.

In process of time the teeth regained their natural whiteness. I have since had opportunity to ascertain that the blackness of the teeth was not produced by the medicine; and I am inclined to believe that it was caused by the acid fluid that was ejected from the stomach.

My colleague, Cousinie, has seen a case almost identical with this, and which terminated in the same way.

Case III.—On the 30th March, 1815, at night, I was desired to attend on a cow that was blown. I gave her a drink composed of an infusion of tansy, with two ounces of theriaca. In the night the cow began to vomit. It was renewed on the following day. She ate with voracity; but she had scarcely swallowed a very little food ere she appeared to be exceedingly uneasy—she was in evident pain—she bowed her back, and stretched out her neck, and the abdominal muscles were violently contracted; and she was tucked up at the flanks, and there was an evident vermicular motion of the paunch, and then the vomiting began.

I ordered an infusion of peppermint to be given, with six drachms of camphor.

On the third day the vomiting recommenced, and two of these drinks were given.

On the fourth day the vomiting continued, and the infusion of peppermint was given, with an ounce of camphor. Two hours after this administration of the remedy, food was offered to her, which she ate, and vomited no more on that day; but it was necessary to be cautious as to the quantity of food given, for if she was suffered to eat too much, vomiting certainly followed. From this time she began to get altogether better, and was at length perfectly cured.

We should carefully distinguish between two kinds of vomiting very different from one another, and to which oxen and cows are occasionally subject. The first, at which I need only to hint, frequently occurs. It is occasioned by the food being voraciously eaten. M. Fromage has described this. Having many times seen cattle labouring under this species of sickness, I have never thought it worth while to prescribe any medical treatment. Nature is all-sufficient here. She gets rid of the superfluous aliment, and the vomiting seldom lasts more than half an hour. The animal then begins to ruminate, and the indisposition ceases.

The second kind of vomiting is attributable to a spasmodic state and action of the paunch. It is this of which the three cases which I have related afford examples. The treatment which I have employed has been very successful; all three of the patients were perfectly cured. Fromage, who had little ex-

perience among cattle, doubted the existence of these diseases. He regards it as rumination carried a little too far, or performed with an undue degree of spasmodic action. If he had observed the cow, whose disease is related in the third case, he would have been of a different opinion, and would have acknowledged that true vomiting did occasionally exist in ruminants. It is, nevertheless, true that he could have rested his opinion on the experience of many veterinarians, who have employed all kinds of emetics, and in very large doses, in order to produce vomiting, and who have never succeeded in so doing.

We have read with considerable interest these cases of M. Santin, and the observations which he has made are, in our opinion, well worthy of the attention of the reader. It is, however, necessary to come to some understanding about the matter. The food which reascends from the first stomach or rumen into the mouth, in order to be rejected, can it be considered as being vomited? We have always considered vomiting to be the act by which substances, solid or liquid, contained in the stomach are forcibly rejected; but the first stomach is only a duplicature of or appendix to the stomach—it is only a reservoir: the fourth, or abomasum, is the true stomach. The substances rejected in the cases of M. Santin not being those which were contained in the true stomach, that which M. Santin calls vomiting, ought to be considered only as regurgitation. In this point of view Fromage is right; and rumination is, in fact, a kind of regurgitation rather than vomiting."—*French Edit., Journal des Sciences Zooiat., Juillet* 1836.

[The importance of these cases ought not to be diminished by a mere quibble about words. Rumination is regurgitation; and yet what is regurgitation but vomiting with the slightest degree of spasmodic action?—the mechanism, the agents employed, are precisely the same. The question whether the rumen can be properly considered as a stomach, or whether it is a mere appendage to the œsophagus, admits of much to be said on both sides, and should scarcely be agitated here. M. Santin describes a disease of the digestive organs, fortunately a rare one, but attended by serious consequences. We shall most of us witness it in the course of our practice; and we are thankful to him for the successful mode of treatment which he has pointed out. As physiologists we will at some other time debate the question of the identity or difference between regurgitation and vomiting in ruminants; but we will not have our attention here withdrawn from an important point of practice.—Y.]

ARTICLES USED AS FOOD FOR THE HORSE.

We make another extract from Professor Stewart's "Stable Œconomy," a work that will ere long be in the hands of every veterinary surgeon and horseman. It affords a fair sample of the general knowledge, and that of a very interesting kind, which may be obtained from this summary of horse management. The author had been describing the different kinds of green and dry herbage used in our own and foreign countries. His distinction between good and bad, and old and new hay—his account of heated and musty, and weather-beaten and salted hay, is exceedingly valuable, as is his computation of the proper quantity allowed to each horse, differing according to its quality, and the proportion of other substances allowed, and also the description and work of the horse. He states, very impartially, the relative value of potatoes and turnips, carrots and mangel wurzel, and that differing according to various circumstances; then, having compared the quantity and kind of nutriment afforded by wheat, barley, and oats, and given a very full account of the varieties and qualities, and good or bad effects of the last of these substances, he proceeds to speak of other articles of food, not so much known or constantly used in our country.

Buck-wheat, or Brank, is hardly known in this country. It is used on the continent, and the horses are said to thrive on it. Young says, that a bushel goes farther than two of oats, and that, mixed with at least four times as much bran, one bushel will be full-feed for any horse for a week. The author of the "Farmer's Calendar" thinks that he has seen it produce a stupifying effect; and Bracy Clark says it appeared to him to be very laxative. In Holland, and many parts of Germany and Norway, it is made into a black bread, with which the horses are fed.

Maize, or Indian-corn, is much used as a horse-corn in America, and in various parts of Europe. Cobbett recommended its introduction; and, among its other uses, spoke of horse-feeding. I do not know that it has been tried sufficiently to determine whether it might be used with advantage during a scarcity of other corn. Probably it ought to be boiled and mixed with chaff: but horses eat it greedily when raw. Bracy Clark says it is apt to clog the stomach, and affect the feet in such a singular way that the hoofs frequently fall off when the horse is on a journey. He alludes to founder; but seems ignorant that any kind of corn, when improperly given, will produce the same effect. Perhaps maize does it more readily.

Rye is very generally employed as horse-corn in North America.

It is coarsely ground, and sprinkled over straw and clover chaff, previously wetted, by which means the whole mass is well incorporated; mastication also is so much assisted, that no part is wasted, and the condition of the carriers' horses on the roads in Pennsylvania, where they are universally fed in this way, and are seldom lodged in a stable, proves the excellence of the practice.

Rye is also used in Germany, but generally in the shape of bread, being made from the whole flour and bran: and it is not unusual, in travelling through some parts of that country, and of Holland, to see the postillions help themselves and their horses from the same loaf*."

Beans.—There are several varieties of the bean in use as horse-corn, but I do not know that one is better than another. The small plump bean is preferred to the large shrivelled kind. Whichever be used, the beans should be old, sweet, and sound. New beans are indigestible and flatulent; they produce colic and founder very readily. They should be at least a year old. Beans are often ill harvested; and when musty or mouldy, though quite sweet internally, horses do not like them. They are often attacked by an insect which consumes much of the flour, and destroys the vitality of the rest. The ravages of the insects are plain enough. The bean is excavated, light, brittle, and bitter tasted. A few in this state may do no harm; but when the beans are generally infected, it is not likely that they are eaten with impunity, and very often the horse refuses them altogether. Damp, musty, ill-kept beans, though old, are as flatulent as those which are new. All kinds are constipating.

Though in very general use for horses, beans are not so extensively employed as oats: according to the chemists, they contain much less nutriment; but in practice it is universally allowed that beans are much the strongest of the two. The comparison, however, is almost always made in reference to a measured quantity. A bushel of beans is, beyond all doubt, more nutritious than a bushel of oats; but it is questionable whether a pound of beans is stronger than a pound of oats. Beans weigh about sixty-three pounds per bushel; and if given in an oat measure, the horse may be getting nearly double allowance. This, I am persuaded, often happens; and hence arise those complaints about the heating, inflammatory nature of beans. The horse becomes plethoric; the groom says the humours are flying about him. It is very likely that he would be in the very same state if he were getting an equal weight of oats.

If beans do not afford more nutriment, weight for weight, than oats, they at least produce more lasting vigour. To use a com-

* British Husbandry, vol. i, p. 146.

mon expression, they keep the stomach longer. The horse can travel farther; he is not so soon exhausted. "I remember," says Nimrod, "hearing Mr. Hoare exclaim, as his hounds were settling to their fox, 'Now we shall see what horses eat old oats, and what eat new.' I am inclined to think that this distinction may be applied to horses that eat beans, and those that eat none; for they help to bring him home at the end of a long day, and support his strength in the run." I believe Nimrod is quite right. In the coaching stables, beans are almost indispensable to horses that have to run long stages. They afford a stronger and more permanent stimulus than oats alone, however good. Washy horses, those of slender carcass, cannot perform severe work without a liberal allowance of beans; and old horses need them more than the young. The quantity varies from three to six pounds per day; but in some of the coaching stables the horses get more, a pound of oats being deducted for every pound of beans. Cart horses are often fed on beans, to the exclusion of all other corn; but they are always given with dry bran, which is necessary to keep the bowels open, and to ensure mastication. Beans are not in general use for race horses, but are sometimes given to bad eaters. They are usually split and hulled, which is a superfluous process. For old horses they should be broken or bruised. Some horses will not eat beans. The Irish horses when first brought to this country always refuse them; they invariably pick out the oats and leave the beans. It does not appear that they dislike them, for after they begin they feed as well as other horses. Ultimately, they seem to discover that beans are for eating, although it is often a long time ere they make the discovery.

The horse, however, may soon be taught. Let him fast for an hour beyond the feeding-time, and then give him *half* a ration of beans without oats. If he still reject them, offer them split or broken, or moisten them, and sprinkle a little oatmeal over them, sufficient to make the beans white. If he still demur, put another horse, a hungry one, beside him, and he will soon teach his ignorant neighbour.

Bean-meal, or flour, is sometimes added to the boiled food; but it is oftener given in the water, to cure the staling-evil.

Bread.—In former times it was customary to feed horses with bread, and the statute-book is said to contain several acts of Parliament relating to the manner of making it. Gervase Markham, a very old author, says, "horse-bread, which is made of clean beans, clean peas, or clean fitches, feedeth exceedingly." It is not many years since a bread composed of wheat, oats, barley, and beans, ground and mixed in varying proportions, was used in the racing-stables. The bread was well baked, and

given when sufficiently old to crumble down and mingle with the corn. Eggs and some spices were sometimes introduced in making it. Nothing of the kind, so far as I know, is now used in this country. In different parts of Europe bread forms the customary corn of the horses. A French periodical of 1828, mentions an agriculturist "who fed his horses with a bread composed of thirty bushels of oatmeal, and an equal quantity of rye-flour, to which he added a portion of yeast, and nine bushels of potatoes reduced to a pulp. With this bread he kept seven horses, each having twelve pounds per day in three feeds. It was broken into small pieces, and mixed with a little moistened chaff. He had fed his horses in this way for four years. Previously he had used oats, hay, and straw-chaff. The translator says he saved forty-nine bushels of oats in twenty-four days. But this is nonsense, for he had only seven horses. I take the quotation from "The Farrier and Naturalist," a dead journal.

The Magazine of Domestic Economy is not much better. The February number for 1837 tells us, that one ton of oats made into bread yields more nutriment than six tons of the raw article, and that in Sweden this has been proved by experience. It has never been proved in Scotland, and I dare say it never will. It is true, however, that a bread composed of oatmeal and rye, in equal quantities, has long been used for horses in Sweden. It is broken down and mixed with cut straw. It is in common use over different parts of Germany. I cannot learn any particulars as to the mode of making, nor of the quantity given, nor of the horse's condition. In France, many attempts have been made to produce a bread that would wholly or partially supersede oats, which seem to be comparatively precious on the continent. Buck-wheat, rye, barley, wheat, and potatoes, have been tried in varying proportions, and, according to several accounts, with success. But it does not appear very distinctly why these articles should be converted into bread, which is a costly process, rather than given raw or boiled. It is, indeed, alleged, that some of the constituent principles are not digestible until they have undergone fermentation; and it may be so, but no proof is shewn that I have seen*.

Linseed in small quantities, either whole or ground, raw or boiled, is sometimes given to sick horses. It is too nutritious for a fevered horse, but it is very useful for a cough, and it makes the skin loose and the coat glossy. Half a pint may be mixed with the usual feed every night. For a cough, it should be boiled,

* See the Recueil de Med. Vétérinaire, Fevrier 1837 et Janvier 1834; Mem. de l'Académie, 1772; Les Annales d'Agriculture Française, 1826; and Le Journal des Haras, tom. ii, p. 184.

and given in a bran mash, to which two or three ounces of coarse sugar may be added.

Oil-Cake, ground and given in the boiled meat, when not very rich, consisting chiefly or entirely of roots, is much stronger than bran, and stronger, perhaps, than oatmeal seeds. Two to four pounds per day is the usual allowance. It makes the hair glossy. Horses seem to tire of it soon, but the farmer will find it useful for helping his horses through the winter.

Hempseed used to be given to racers a few days before running. It was supposed to be invigorating and "good for the wind." I believe it is not now employed, except occasionally to stallions, during the travelling season. Some give four or six ounces every night.

Sugar, Mr. Black, veterinary surgeon to the 14th Light Dragoons, informed me that sugar was tried as an article of horse food during the Peninsular war. The experiment was made at the Brighton depôt, upon ten horses, during a period of three months. Each got eight pounds per day at four rations. They took to it very readily, and it was remarked that their coats became fine, smooth, and glossy. They got no corn, and only seven pounds of hay instead of the ordinary allowance, which is twelve pounds. The sugar seemed to supply the place of corn so well, that it would probably have been given to the horses abroad. But peace came; and the circumstances which rendered the use of sugar for corn desirable, ceased. The horses returned to their usual diet; but several of those who were the subjects of this experiment became crib-biters.

That the sugar might not be appropriated to other purposes, it was slightly scented with asafœtida, which did not produce any apparent effect upon the horses.

Fruit, as gourds, and sweet potatoes, in America; figs and chestnuts in Spain and Italy; apples in some parts of France; and numerous other fructified exotics are occasionally employed as food for horses*. *Horse chestnuts*, it is said, would probably form a valuable article of medicinal food for horses. In Turkey the nuts are ground, and mixed with other food; and they are regarded as a remedy for broken wind, and seviceable to horses troubled with coughs†.

Haws, the fruit of the hawthorn, have been employed by West, of Hampshire, as an article of food for farm horses, with what profit I have not learned. "The people of Medjid feed their horses regularly on dates. At Deyrach, in the country of the

* Blaine's Vet. Outlines, p. 94, London, 1832

† Comp. Grazier, p. 529, 1833.

Flassæ, dates are mixed with the clover. Barley, however, is the most usual food in all parts of Arabia*.

Flesh.—The structure of the horse does not seem adapted to the assimilation of animal food. But some seem to have no dislike to it; and it is well to know that it may, to a certain extent, supply the place of corn. I have seen them lick blood repeatedly and greedily. Bracy Clark says he has seen a well-attested account in a magazine, of a colt that was in the habit of visiting a pantry-window which looked into his paddock, and of stealing and eating mutton, beef, veal, and poultry. Pork he seemed to reject. In the East Indies, meat boiled to rags, to which is added some kinds of grains and butter, is made into balls, and forced down the horse's throat.—*Carpenter's Introduc. to the Wars of India.* Also sheeps' heads, during a campaign, are boiled for horses in that country†.

"While at the stable of Mr. Mellings, of Wakefield, the groom would let me see a flesh-eating horse. He brought about a pound of roasted beef and as much raw bacon, which he warmed. I took away the horse, while the groom put the meat in one corner of the manger, and a feed of oats in the other. I put in the horse and directed his nose to the corn; but he darted from that to the bacon, which he greedily devoured. He then ate his corn. The groom said this horse would finish the bone of a leg of mutton in a few minutes, and that roasted meat was his favourite dish‡." The wealthy people of Medjid frequently give flesh to their horses, raw as well as boiled, together with all the offals of the table. I knew a man at Hamah, in Syria, who assured me that he had often given his horses washed meat after a journey, to make them endure it with greater facility. The same person related to me that, apprehensive of the governor of the town taking a liking to his favourite horse, he fed it for a fortnight entirely on roasted pork, which raised its mettle to such a height that it became absolutely unmanageable, and could no longer be an object of desire to the governor.

Fish.—"In Ireland it is stated by Buffon, that dried fish is made the food of horses; and my friend, William Bullock, senior, lately informed me he saw them in the same practice in Norway§."

Eggs are sometimes given to stallions in the travelling season, for exciting desire, and to other horses for producing a smooth

* Comparative View of the past and present State of the English Racer. *Hookham,* 1834.

† Clark, Pharmacop. Equina, Lond. 1833.

‡ The Veterinarian, vol. v, p. 25. Letter from Mr. Garland, V.S. Wakefield.

|| Past and present state of the English Racer, 1836.

§ B. Clark, Pharm. Eq.

coat. They are quite useless for either purpose, at least as they are given, only one or two at a time. If they are to do any good, the horse would need a dozen of them, or thereabouts, I should think. One or two, however, can have no good effect. The egg is chipped, *starred* as they call it, all round, and given raw, like a ball.

Several, many horses have been lost by the egg sticking in the throat and producing suffocation. If eggs must be given, let them be broken and mixed with a mash, or boiled hard and added to the corn. But I see no need of them in any shape.

Milk.—In this country milk is not used as an article of food for grown-up horses. Occasionally it is given to stallions in the covering season. A mash is made of milk, bran, and oil-cake, ground; and in Ayrshire, whey is frequently given to stallions as a drink. It is supposed to be "amatory food." The Arabs, in traversing the Desert, are said to give their horses camel's milk, when forage fails. Major Denham, speaking of some horses he met with among the Tiboos, says—"two of them were very handsome, though small; and on remarking their extreme fatness, I was not a little surprised to learn that they were fed entirely on camel's milk, corn being too scarce and valuable an article for the Tiboos to spare them. They drink it both sweet and sour; and animals in higher condition I scarcely ever saw*."

THE VETERINARIAN, MAY 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

We refer with much satisfaction to the reports of the late proceedings of the Veterinary Medical Association, as given in the latter portion of this month's Journal, and extended to somewhat more than their usual length. The profession is much indebted to Messrs. Beech and Baker for the subjects selected by them and the manner in which they are treated.

As to the dangers to the horse in the battle-field, they have been lightly passed over by our best writers on veterinary surgery, as interesting only to a small division of our brethren, but, a class of men deservedly respected, and on whose character and bearing our general acceptation and repute much depend.

* Denham's Travels in Africa.

Mr. W. Percivall says nothing of gunshot wounds, because the limits of his work did not permit it.

Mr. Blaine devotes a single page only to this subject; but it is a closely printed one, and affords one of the happiest specimens of this author's peculiar art of condensation. Mr. Beech has carefully read this short but valuable sketch, and adopted most of the opinions inculcated in it; but he justly claims the praise of being "the only author who has mentioned the subject, and related cases to illustrate it."

Professor Vatel, in his *Élémens de Pathologie Vétérinaire,* enters at considerable length into the subject; but he seems to take a somewhat erroneous view of it. Instead of considering the case in all its bearings, he regards the first and almost the only indication to be the extraction of the foreign substance; and to this point, and this alone, all his precepts tend. He adopts, almost to its full extent, the old and abominable practice of probing and dilating every wound, not only for the purpose of extracting the ball, but any other foreign substance that might have been introduced with it. Messrs. Blaine and Beech, however, are men of practical experience in these cases; the one, before he adopted our profession, on the poor wounded soldier; the other, on the horse itself. While they tell us to extract the ball if it can be felt, or any extraneous substances which would necessarily do harm, they caution us against unnecessarily irritating the parts, and thus setting up an inflammation which we can never afterwards subdue.

A history is given by Professor Rodet of the successful extraction of a bullet from the shoulder of a horse, and which, at some future time, we shall translate. It was only at the urgent entreaty of the owner that he undertook the operation, and he candidly attributes his success, partly, to good fortune.

Hurtrel D'Arboval devotes several pages to this subject; but he is evidently copying the practice of the human practitioner, with little reference to the horse. His, however, is high authority in both professions; we will, therefore, quote a few paragraphs from him.

When the ball passes *through* any particular part, the aper-

ture at which it entered, and that by which it escaped, seldom correspond either in size or situation. The aperture by which it entered is the smallest, because the ball comes with nearly its full velocity, and the parts yield immediately; but, in passing through the limb, its impetus is considerably diminished by the resistance of the intervening tissues, so that, when it arrives at the opposite side, the integument is no longer destroyed, but gradually distended, until the fibres give way, and an irregular lacerated wound is made, the edges of which manifestly project outwards, while, at the first aperture, they have a slighter inclination inwards. This will also determine whether the horse has received two wounds, or only one; for, from the resistance of bone, or cartilage, or the fascial covering of the muscles, or the play of the muscles themselves, the ball will often pursue a strangely devious path. It has occasionally happened that there has been a distance of a very few inches only between the apertures.

The contusion and the final eschar are, however, more considerable at the first aperture than at the other. The blood, repelled by the violence of the shock, is extravasated around the aperture, and forms an ecchymosis always larger and more intense at the first apertures.

The constitutional derangement is very uncertain: a little purgative medicine, and diminished rations, may be all that will be required. At other times a most intense fever will be set up, and which will require decisive antiphlogistic measures. The question of bleeding will depend on circumstances; but it will in general be good practice not to have recourse to venesection unless the injury is exceedingly severe, and inflammation is appearing. The size of the projected body, the importance of the injured parts, the extent of the passage of the ball, and its present situation, are circumstances to be taken into serious consideration.

The presence of the projectile is an obstacle to the healing process, and our operations should commence by an attempt to extract it; but if, in the accomplishment of this purpose, it may be necessary to cut any nervous trunk or large vessel, or to penetrate into any splanchnic cavity, it may be advisable to

wait until nature has placed the ball in a more favourable situation.

In order to examine the wound, and determine on the course to be pursued, it will be desirable to place the limb as much as possible in the situation in which it was at the moment of receiving the wound, and, also, to endeavour to relax the muscles of the part, in order that the probe may more readily pass, and the foreign body be distinguished. The finger is the best instrument if the intruding substance can be reached by it; otherwise the probe should be somewhat large, round, pointed, flexible, and composed of elastic gum, or of lead. If the ball can be felt, it should be ascertained, if possible, whether the form of it is altered, and it should be so seized and managed as most readily to be extracted.

Nothing should be inserted into the apertures in the form of dressing; but compresses wetted with the acetate of lead should be placed over them. Absolute rest should be ordered, restricted diet, bleeding, gruel, and injections. Emollients applied to the parts, and local bleeding, will often be advisable. In other respects, the treatment will not differ from that of suppurating wounds. Such is a summary of Hurtrel D'Arboval's opinion.

We cannot better close this account of the treatment of gunshot wounds than by quoting the advice of Mr. Willlam Lawrence, as given in one of his lectures on this subject, as it regards the human being. Mr. Beech, and the members who took part in the discussion, will be pleased to see to what extent their practice coincides with his advice.

"In considering the *treatment of gunshot wounds*, we may observe, that injuries of this kind are very often complicated, in consequence of the presence of foreign bodies. It is desirable, in the first instance, to remove such foreign substances, when it can be accomplished *easily*. When the bullet or fragment is near the external opening of the wound, and it can be removed by inconsiderable incision, or if a bullet, for instance, having gone through a limb, be just under the skin at the opposite side of the limb, and you can remove it by merely making a division of the skin, by all means take it out. If there be a large mass of clothing so situated that, by a little incision you can remove it,

it will be desirable for you to do so, for objects of this nature will become sources of irritation in subsequent stages of the proceedings. When, however, you cannot get rid of them without tedious search, or extensive incisions, you had better leave them alone. It often happens that bullets are driven far into the body, and, without being detected after the infliction of the wound, they remain in the situation to which they reached in the first instance, and actually continue there for a number of years without exciting any irritation in the part. It frequently happens that the direction of a bullet, on entering the body, is diverted; it does not go straight through from one surface to the other: it does not pursue a straight course, but it will be diverted from its regular direction by striking against a bone, or meeting with a tendon, or the convex surface of a muscle; and, indeed, so much so, that the mere external opening of the wound, and the direction which the bullet seemed to have taken on first entering the body, do not give you any means of tracing out the part at which it has arrived. In many cases you cannot find out where the bullet is seated, so that you have not the means of tracing it. After the reasons I have given you, it is not worth while to make any great search for the foreign body. It is better to leave the thing alone, for you find that no very serious effect is produced by its presence. For the first few days after the infliction of such a wound, you cannot do better than keep the part covered with a cold, wet cloth. That is the most likely mode to prevent inflammation. If the cold should be unpleasant to the patient, you may apply a poultice. As to the posture of the limbs, you should adopt the position best calculated for its quiet. With regard to the state of the patient's body, diet, and all other such circumstances, you should adopt that plan which is most likely to prevent the occurrence of inflammation, for that is the great source of danger in such cases. Under certain circumstances, it will be necessary for you to adopt very active antiphlogistic means. Where a part of great importance is the seat of injury, and where the injury is very considerable, you must have recourse to them. Such, then, are the means that you should employ in gunshot wounds."

To Mr. Baker the Association and the profession are much indebted for his valuable Essay on *Obstetric Auscultation*. In the

year 1828, and in the fourth No. of the first vol. of THE VETERINARIAN, the writer of this article earnestly recommended the use of the stethescope to his professional brethren. He had not then had recourse to *immediate auscultation:* but he was enabled to say, "the stethescope applied to the thorax of the horse will give the murmur of the healthy lung during each act of inspiration and expiration. I am persuaded that I have more than once heard this noise, becoming more sonorous with the morbidly increased action of respiration, and again returning to the natural murmur when inflammation had subsided, and absolutely ceasing when congestion had begun; and ceasing in some spots and strengthening in others when congestion had partially taken place, and the labour of other portions of the lung was increased to supply the deficiency; and likewise ceasing, but an obscure undulatory pulsation remaining, when effusion had commenced."

He acknowledges, however, that he had not then dreamed of applying it to the detection of pregnancy, although many years did not happen before he began to avail himself of this useful auxiliary. Mr. Baker is certainly the first person who has publicly recommended this important improvement in our art. We cordially thank him for it, and to him the honour must be awarded. At no great distance of time, if it were only for the greater convenience and safety of the examination, as well as the more determined sound which he will obtain, he will abandon the stethescope, and trust to the unassisted ear.

It very singularly happened, that while the Veterinary Association discussed this question on the 13th of March, the same subject engaged the attention of the Westminster Medical Society on the 24th of the same month. It will be interesting to contrast the two discussions.

DR. WILLIAMS commenced by speaking of the neglect of obstetric auscultation in this country; a subject deeply to be regretted, considering the extreme importance, in some cases, of ascertaining the existence of pregnancy, both as regarded the safety and character of the patient, and the reputation of the medical attendant. The general signs of pregnancy were manifestly uncertain, and auscultation offered better and more decided means of arriving at the truth.

The sounds to be detected by the application of the stethescope in a case of pregnancy were two-fold, and depended on the circulation of the blood. The first was the uterine murmur connected with the circulation of the mother; the second was the pulsation of the fœtal heart.

The first of these sounds was the earliest to be detected, and was to be heard in one of the iliac regions a little above the pubis. The pulsation was at first simple, no murmur being present. In

the course of two or three weeks the murmur became gradually distinct, and was generally more prolonged as the pregnancy was more advanced. The murmur differed in different individuals. In some it was of a blowing character; in others of a file-sound; and in some a cooing murmur. The sound was synchronous with the pulsations of the arteries in the neighbourhood.

Writers differed as to the seat of this sound. By some it was considered to arise from the pulsations of the blood passing into the placenta; but as it was heard for a short time after delivery, and after the placenta had become impervious from the death of the child, this explanation was not satisfactory. He believed that the sound depended on the circulation in the uterine vessels generally.

An opinion had lately been broached, that the sound depended on the pressure of the uterus on one of the iliac arteries. This appeared at first plausible; but the facts which had been stated by Dr. Evory Kennedy were against it; for when the uterine vessels were obstructed by the death of the child, the murmur soon ceased, although the pressure of the uterus on the artery was not removed. This sound also was very rare in ovarian disease.

Regarding the time at which the sound is to be first distinguished, Dr. Kennedy had detected it at the tenth week of gestation; earlier writers mention a much later period. He had heard it at the end of the eleventh week. Now, did this sound occur from other causes besides pregnancy? We knew that the pressure of an artery produced a bellows-murmur; but this pressure was very uncommon in the parts in question. There was a bellows-murmur over the arteries in cases of anemia; but this was observed to be the case all over the body, and the sound was not confined, as in cases of pregnancy, to one particular spot. The presence of this murmur in one of the iliac regions was not alone to be taken as demonstration of pregnancy; but it was a surer sign of that state than any of the general symptoms, and, when combined with these, amounted to a certainty.

The second sign, the pulsation of the fœtal heart, was heard later, and, when distinctly detected, was a conclusive sign of pregnancy. In the advanced stages of *gestation*, when this sound was not heard by the experienced auscultator, pregnancy was not present, or the fœtus was dead. The sound of the heart was to be heard in a circumscribed spot, midway between the umbilicus and the pubis, a little on one side of the mesial line. In the earlier stages, it required great attention and perfect quiet in order to detect the sound. In later stages, it was very clear and distinct, and was heard over a larger space. At first the sound was single, averaging about 160 to 180 beats in a minute. At

about the sixth month the pulsations became double, and averaged from 130 to 160. The sound of the fœtal heart was generally first heard about the period of quickening; in other cases before it. He had heard it ten days or a fortnight before the quickening. It could not be well mistaken for any other sound. Regarding the mode in which the examination was to be conducted, the use of the stethescope was better, in both cases, than the direct application of the ear.

Dr. Reid agreed with the opinion of Dr. Williams; but the uterine murmur was with difficulty detected before the fourth month, and the sound of the fœtal heart was not distinct until much later. He thought we should be cautious in giving a decided opinion.

Dr. A. T. Thomson said that at the later periods it was not so difficult to decide on the presence of pregnancy; it was in the early stages that the use of the stethescope, as a means of diagnosis, was the most valuable. The importance of this early knowledge could not be over-rated, particularly in some medico-legal cases.

Dr. Chowne had heard the placental murmurs very early. He differed from Dr. Williams in thinking that the murmur belonged to the vessels of the uterus generally, for he (Dr. C.) considered that it was only to be heard in that part of the uterus to which the placenta was attached. He had been confirmed in this opinion lately in a case of twins. After the first child was born, he was enabled to pass his finger up to the placenta, and ascertain its attachments. Over this part he heard the placental murmur very distinctly; but it was not by any means clear in other parts of the abdomen. After the placentæ were removed, he could detect no murmur whatever.

The absence of the sound of the fœtal heart was not decisive evidence of the death of the child. In the case alluded to, he failed to detect the sound of the heart of the second child. It was a footling case, and the child was born alive. The absence of the sound might arise from extreme debility of the fœtal circulation, or the peculiar position of the child in the uterus.

Dr. Williams said that the observations which had been made on the uterine murmur by Dr. Kennedy had sufficiently proved that it was not always loudest over the situation of the placenta. *Lancet, April* 14, 1838.

TO CORRESPONDENTS.

It was Professor Renault from whose letter an extract was read at the meeting of the Veterinary Medical Association on February the 20th. We much regret such an error of the press.

That, with regard to which several of the Editor's kind friends inquire, will not be decided until the 1st of September.

L.—We really do not know; if we did, we would eagerly join our Correspondent in exposing so rascally a transaction.

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ANIMAL PATHOLOGY.

By Mr. YOUATT.

LECTURE XIX.

The Cause of Rabies—No Reasoning from Analogy admitted—The Cause in the Human Being—The Quadruped—Is want of Ventilation a Cause?—or Heat?—Atmospheric Influence?—Thirst?—The Origin of the present too prevalent Opinion—The Origin of Rabies—The Ease with which the Inoculation may be unknowingly effected—The immediate Consequences of it—The Virus resides in the Saliva—Can all Animals communicate the Disease?—It can be communicated by the Carnivorous and Herbivorous—Can it by the Horse, Sheep, or Cattle?—The Importance of settling the Question—Caution.

WHAT is the cause of this fearful disease that has so long occupied our attention? I answer at once—*the saliva of a rabid animal received into a wound, or on an abraded or mucous surface.* Do I admit no other cause? I will admit any thing, every thing that is based on facts; but I will listen to no analogical reasoning—to no theoretical speculation. I must have plain, broad, palpable facts. I will have no reasoning from the cause or progress or termination of one disease to that of another; for I cannot have been long in practice—I can have paid but little attention to my profession, ere I have a thousand proofs that every disease is governed by its own laws, and by those alone. To those, discovered and proved by my own experience, or that of others, will I appeal, and to nought beside.

No Reasoning from Analogy admitted.—I glance at the list of animal poisons. Syphilis is communicable only by the contact of the virus with an abraded or mucous surface. What should I say to the young man who, labouring under this disease, stoutly maintained that he was not paying the price of his own folly. Variola, distemper, malignant fevers, are communi-

cable by the halitus, or through the medium of effluvia, or by the slightest contact, as well as by inoculation. Mange, glanders, distemper, may be communicated or bred. Each has its own mode of action, and is governed by its own laws; and experience alone can determine what that mode of action and those laws are. That which is known of one disease cannot with certainty be predicated of any other. Reasoning from analogy is delusive, dangerous, inadmissible. We appeal to facts, and to facts alone we bow.

The real Facts of the Case. The Human Being.—Now, what is the fact here? I first take the human being. Hydrophobia, or the dread of water—spasmodic contraction of the pharynx, and a difficulty or dread of swallowing—may be produced by some state of high nervous excitation, and it runs its course and passes away: but the train of symptoms which we have described in a former lecture as constituting rabies, is so invariably connected with the influence of the rabid virus, that no medical man ever sees such a case without, at once, associating with it, and unhesitatingly affirming that it was produced by, contact with the virus of a rabid animal. In nine hundred and ninety-nine cases out of a thousand he obtains demonstrative proof of this. So uniform has been the experience of practitioners, that no one now pretends to assert that rabies ever arises spontaneously in the human being.

The Quadruped.—So uniform is the connexion between the appearance of rabies in the horse, cattle, sheep, and swine, and the knowledge or discovery of a previous bite by a rabid dog, that all veterinary surgeons are agreed that rabies, in these animals, is caused by inoculation alone: but it is maintained by some, that this disease may be produced spontaneously in carnivorous animals—in the dog—the wolf—the fox, and some others. We ask for the proof of this. We ask for a single instance in which rabies can be shewn to have arisen from any other cause than inoculation. We are all agreed that it is the most common cause. I do not require too much when I demand a detailed account of a single supposed exception.

Want of Ventilation a supposed Cause of Rabies.—Professors Coleman and Sewell both assert that rabies may be produced by imperfect ventilation—by heat—by thirst—by any thing, in fact, which will produce fever in the animal. Professor Coleman says, expressly, that "he has made up his mind on one point, namely, that rabies may arise in consequence of dogs being exposed to their dung and urine, and to confinement, and to too much food, and too little exercise." And in a letter sent to a committee of the House of Commons, he says, "Hydrophobia is

often *generated* from breathing a confined atmosphere, impregnated with an animal poison from the lungs, fæces, urine, and skin; and it will be more or less prevalent as dogs are more or less exposed to these causes*."

I would respectfully ask for proof of this. At a former period of my life, I seldom had fewer than twenty dogs in my hospital, and often double that number. There was as much attention to cleanliness as I could enforce, but there was occasional neglect, and often most villainous smells; yet I can truly say, that, in the course of five-and-twenty years' practice, I had not a single case of spontaneous rabies. During the greater part of that time—I will not say that I was free of the cellars of the dog dealers, but I had continual occasion to go into them, and more filthy and horrible places it is almost impossible to imagine. I have seen there mange, leprosy, and distemper. I have known dogs consigned to them in perfect health; and when, a few weeks afterwards, they have been liberated, they had contracted diseases, from the influence of which they never perfectly recovered: *but I never knew or heard of a single case of rabies resulting from this horrible confinement;* and, therefore, I am authorized in challenging, and I do challenge the production of one. I only bargain for a detailed history of the case, and I am justified in that by the account which Professor Coleman himself gives of cases of supposed rabies produced by these agents. He says, that "he knows of one instance of canine madness" being produced by these causes, viz. in "the subscription pack of fox-hounds in Surrey, which had the disease to a considerable extent; and there was one remarkable fact, that the dogs did not bite the bitches, nor the bitches bite the dogs†." Now, this "remarkable fact" inclines me to suspect that there was no rabies in the case. I have long been accustomed to regard a forgetfulness of the courtesy and kindness due to the female as one of the most decisive characters of rabies. It is seldom that any serious quarrels occur in the kennel between the dog and the bitch, if they are suffered to be together; but the moment that the effect of the rabid virus is fully developed, all distinction of sex is either forgotten, or, if the animal feeling is sometimes

* Minutes of Evidence on Canine Madness. VETERINARIAN, vol. iii, page 636.

Professor Coleman also states, in his Lectures, that want of ventilation, and exposure to this animal poison, is the cause of the *rot in sheep*. Being folded too closely, they inhale each others' breath, and the poisonous gases which emanate from their dung and urine. Folded in the open air, and the winds of heaven blowing over them from every quarter, they become rotted from the want of sufficient ventilation!!

† VETERINARIAN, vol. iii, p. 636.

strangely increased in the rabid dog, he is, as I have described him in a former lecture, "no sooner parted from his paramour, than he attacks her with the utmost fury, and literally tears her to pieces." This fact, then, of the dogs not biting the bitches, nor the bitches the dogs, would be almost proof positive to me that some febrile or cerebral affection was here mistaken for rabies, and I have shewn, in a former lecture, how easily this may happen*.

Heat has been supposed to be an exciting cause of rabies. Dr. Heineken says that curs of the most wretched description abound in the island of Maderia—that they are afflicted with almost every disease—that they are tormented by flies, and heat, and thirst, and famine, and yet no rabid dog was ever seen there†. With the exception of Jamaica, into which the disease was imported from the continent of America, in the year 1783‡, it has not yet found its way into the West Indian islands, or the Indian Archipelago, or Syria§, or Egypt‖, or the south of Africa, or any part of the continent of South America. It has gained some footing in Spain; but it has penetrated a little way only into Portugal, and has never yet been seen in the streets of Lisbon. In Constantinople it is unknown, although in that city and in Lisbon there are, according to the advocates of spontaneous rabies, other active causes, connected with filth and the want of water.

These are extraordinary and undoubted facts. Dr. Heineken seems to draw from them the natural inference. "When the favourable circumstances under which the canine race is here placed for generating the disease are considered, we may conclude that hydrophobia cannot be produced *de novo*¶.

The annual report of my humble school for 1834, places in a very strong point of view the independence of rabies on that principle which has been supposed to have so much power over it, namely, temperature. There were as many cases of rabies in

* Some fearful tragedies have taken place connected with this symptom and stage of the disease. A young man having received a bite from a dog, to which no attention was paid, and being married six months afterwards, was, on the wedding night, seized with rabies, and murdered his bride by literally tearing out her entrails with his nails and teeth.

A fact of similar horror happened not many years since in Scotland. A man tore his wife to pieces in the same way, and was himself found dead in the morning, having beaten out his brains against the walls.—*Agricultural Magazine, July* 1800.

† Med. Rep. July, 1824, p. 14.

‡ See Mosely on Hydrophobia, and the valuable work by Abhande.

§ London and Med. Journal, 1784.

‖ Larrey, Relation du Expedition, § 9.

¶ Medical Repository, July, 1824.

the cold month of December, as in May, July, September, and October put together*; and at the present moment this disease, which has been dreadfully prevalent, throughout the winter, in almost every district of the kingdom, is comparatively disappearing, although the summer is advancing.

Scarcely a week passes during the summer season, without some earnest exhortation from the sage editors of the public press to give our dogs plenty of water. On the principle of humanity I should cordially agree with them. A few small watering troughs, in convenient parts of our streets, would relieve this useful and faithful animal from the torture of excessive thirst, but it would be powerless in preventing the occurrence of rabies.

Bourgelat once instituted a cruel experiment with regard to the power of deprivation of water in the production of rabies. It was in his time, as at the present day, considered to be one of of the principal causes of this disease. Three dogs were prevented from all possible access to water. One of them lived six days without drinking—another eight, and the third nine days. The stomach was found dreadfully inflamed in all of them—the bladder contracted to an almost incredible degree—the bile very acrid, and concretions in the bloodvessels, resulting from the viscous state of the blood; but there was not the slightest symptom of rabies†. Can any thing be more conclusive than this?

It was the opinion of the old physicians, that this disease was propagated by inoculation alone. Galen, at the middle of the third century, was the first who broached the occasional spontaneous origin of the disease in the dog and carnivorous animals generally‡: but he cites no instances in proof of it: and some of the old commentators say that "he did not speak this from any experience which he had had of the matter, but that it was a mere theoretical opinion." His name, however, was one of great authority; and it has continued to the present day to be the opinion of many, or of the greater number of medical men, that this disease can be produced in the human being, and all omnivorous and herbivorous animals, by inoculation alone, while it may either arise from this cause, or may be of spontaneous origin in the carnivora.

I will not argue on the improbability of this distinction, because I have already said that I will admit of no theoretical reasoning on such a subject. It must be decided by experience

* Veterinarian, viii, 92.
† Bourgelat, Mat. Méd. raisonée, t. i, 246.
‡ Lib. VI, de locis affectis, cap. 4.

alone, and I do once more demand the proof of this disease arising in any animal without the contact of the rabid virus.

We have nothing to do with the origin of the disease. I can no more account for that than I can for the origin of some other maladies, and particularly that discreditable one to which I have already alluded. It sprung from some unknown morbid action, and, having once spontaneously arisen, is now propagated in its own way.

It is not connected with any degree or variation of temperature, or any particular state of the atmosphere. It is, generally speaking, more frequent in the summer or the beginning of autumn than in the winter or spring, because it is a highly nervous and febrile disease; and the degree of fever and irritability, and ferociousness and consequent mischief, are increased by increase of temperature.

In the great majority of cases, the inoculation can be distinctly proved; in very few can the possibility be denied. The injury is inflicted in an instant. It is a mere snap. There is no contest; and before the injured party can prepare to retaliate, the rabid dog is far away. He had acted from irresistible impulse, and, the mischief being effected, he pursues his course.

It can be easily credited that when a favourite dog has, but for a moment, lagged behind, he may be bitten without the owner's knowledge or suspicion; or even if the rencontre was observed, the trifling, every-hour occurrence of two dogs snapping at each other would be soon forgotten. When the animal is under the care of a servant, the probability of this taking place is much increased. A spaniel belonging to a titled lady became rabid. The dog was her companion in her grounds at her country residence, and in her walks in the garden of the square in which she resided in the metropolis. It was rarely out of her sight, except for a few minutes in the morning, when the servant took it out. She was not conscious of its having been bitten, and the servant stoutly denied it. The animal died. A few weeks afterwards the footman was taken ill. He was hydrophobous. In one of his intervals of comparative quietude, he confessed that, one morning, his charge had been attacked and rolled over by another dog—that there was no appearance of its having been bitten, but it had been made sadly dirty, and he had washed it before he suffered it again to go into the drawing-room. The dog that attacked it must have been rabid, and some of his saliva must have remained about the coat of the spaniel, and by which the servant had become fatally inoculated.

I have already spoken of the degree in which the rabid dog is bent on mischief, and the difficulties which he will overcome in order to accomplish his object. They are almost inconceivable. In the great majority of cases, however, we can prove the actual inoculation.

The immediate Effect of the Inoculation.—Well! the wound is inflicted, and the virus is deposited on its surface; and there it remains, seemingly inert. I know not why the poison of the viper should begin to act at once, and that of the rabid dog should be inert for many a day or week; but so it is. The wound generally heals up kindly: in fact, it differs in no respect from a similar wound inflicted by the teeth of an animal in perfect health. Weeks, months in some cases, pass on, and there is nothing to indicate danger; until, in the human being, and probably in the quadruped, there are pain and itching in the cicatrix, and extending from it towards the cerebrum or the spine.

There is, in some dogs, a considerable state of excitation of the genital organs at the commencement of the disease: the bitch labours under almost irrepressible œstrum, and the dog eagerly, and, as I have said, ferociously attacks every bitch he meets. This is only what the medical man observes occasionally in his patients. Priapism and involuntary emissions are far from being unfrequent. They prove nothing as to the origin and cause of the disease—they only shew that it is one of the nervous system, and by which every division of that system is in turns irritated and finally exhausted. I do not feel it necessary to say more of the theories of Dr. Capello and others, who trace this malady to the non-gratification of the sexual appetite. This system is involved with others in a malady essentially of the nervous functions; but so far as the quadruped, and particularly the dog, is concerned, the animals that are confined, and under constant surveillance, escape its attack; while the rabid dogs are generally those that are often abroad with frequent opportunity to gratify this appetite, but exposed to danger from the attack of other dogs.

The Virus resides in the Saliva.—In what secretion of the rabid animal does the virus reside? In the saliva, and that alone. A poisonous fluid mingles with it, or the saliva itself is altered in its properties. I am not aware that the saliva of the rabid dog has ever been submitted to chemical analysis. It would be a difficult and a dangerous process. It is deposited in the wound. It is brought into contact with some tissue or nervous fibril. It lies there dormant for a considerable and uncertain period, and longer in some animals than in others. It seemingly remains perfectly undecomposed. The absorbents are actively at work in

removing every thing around it. The tissue or the fibril on which it rests is modified or changed; but this extraneous and fatal body bids defiance to every vital power. It enters not into the circulation, for it would undergo some modification in its passage through the frame. It would excite some morbid action, or be employed for the purposes of renovation or nutrition; or it would be speedily ejected. It lies for an uncertain period dormant—but, at length, from its constant presence as a foreign body, it may have rendered the tissue or nervous fibril more irritable and susceptible of impression—or it may have attracted and assimilated to itself elements from the fluids that circulated around it; and thus, increased in quantity, and, according to a powerful chemical law, having supplied in quantity that which it wanted in power, the constitution becomes affected—the symptoms of rabies gradually appear, and, having appeared, rapidly and almost invariably run their course.

Can all Animals communicate the Disease?—At or soon after the time, when the erroneous distinction was first drawn as to the spontaneous production of this disease in some animals, and the liability of all to infection by means of the virus taken from carnivorous ones, arose the question as to the power in each of communicating the disease; and it was maintained by some medical men, and extensively believed, that the power of communicating rabies was confined to those in whom it had been spontaneously produced. Carnivorous animals could generate and propagate it; herbivorous animals could receive the infection, but could not communicate the malady. This is a most important division of our subject, and we should give it very serious consideration.

The Carnivora.—With regard to the carnivora there is no question. There is no species of *dog* that cannot communicate as well as receive infection. The *wolf* is a dangerous animal in the countries in which he is found; and in almost every part of the continent the yearly list of those who have been bitten by him, and become hydrophobous, is a long and fearful one.

In the Philosophical Transactions, No. 169, is a melancholy account of a fatal case of hydrophobia from the bite of a *fox*.

Of the power which the *cat* possesses of communicating the disease there are too many cases on record. There were admitted into the hospital at Zurich, between the years 1783 and 1824, fifty persons that were bitten either by *cats* or *foxes*, and eight by *martens* or *polecats**.

Hufeland's Journal contains an account of its being fatally communicated by a *badger*. Two boys, eight years of age, were bitten by one of these animals in the neighbourhood of Posen

* Edinburgh Med. and Surgical Journal, 1826.

in Prussia. One, it is said, was dreadfully lacerated, and had the soft parts divided down to the bones and ligaments: the other escaped with a slight wound. The usual precautionary measures were taken with regard to each; but the former, from the great extent of the injuries which he received, could only experience a partial employment of the prophylactic means. He was seized with hydrophobia on the 26th day and died*.

A well-authenticated case is on record of the disease following the bite of the pisciverous *otter*†.

The Omnivora.—There is a too convincing proof of the disease being communicated by omnivorous animals. Julian Palmarius states that he has seen horses, cattle, and sheep become rabid from eating of the straw on which some rabid pigs had lain. Dr. Shackmann confirms this‡.

That the human being labouring under hydrophobia can communicate the disease, there are a few, but convincing proofs. A father in the last stage of this malady imprinted a parting kiss on the lips of his child, and the infant afterwards died hydrophobous§.

Half a dozen rabbits were inoculated, by the late Mr. Earle, with the saliva of a woman that had died of hydrophobia following the bite of a cat. Two or three of them died‖.

A more satisfactory result was obtained from some experiments of MM. Magendie and Breschet. They inoculated two dogs with the saliva of a man in the last stage of hydrophobia, and who died on the same day. One of them became rabid, and communicated the disease to other dogs, and to some sheep that were bitten by him¶.

Dr. Zincke instituted similar experiments at Jena, and with nearly the same results. They may be found in the same volume of the Journal Général.

Thus far, then, there can be no dispute that a great many of the carnivorous animals will not only become rabid if inoculated with the rabid virus, but that they then possess the power of communicating the same disease to others. Fewer experiments have necessarily been made on the omnivora; but the result of

* Medical and Physical Journal, May 1822, p. 438.

† Nat. Cur. vol. iii, Obs. II.

‡ Palm. de Morb. Contag. and Shackmann on Hydrophobia, p. 11.

§ The older authors contain several cases of this kind. It may be sufficient to cite Palmarius de Morb. Contag. 1518; Schenck, Observat. Lib. VII, No. 52, 1600; Spindler, Observat. No. 94, 1691; and Zacatus Lusitanus, Med. Pe. Hist. Lib. V, No. 12.

‖ Minutes of Evidence before the House of Commons in 1830, *Veterinarian* iii, 690.

¶ Journal Général de Médécin, vol. lii.

them has been, that the saliva of the swine and the human being will also communicate the malady to those who are inoculated with it. There can be no dispute here.

The Power of Herbivorous Animals to communicate Rabies.—There are, however, some surgeons of eminence, both human and veterinary, who maintain that rabies cannot be communicated by herbivorous animals. A circumstance that happened to a veterinary pupil and friend gave me a deep and painful interest in ascertaining the truth of this assertion. He had incautiously—foolhardily I will call it—endeavoured to ball a horse evidently rabid. The animal seized his hand, and lifted him from the ground, and shook him as a terrier would shake a rat; and quitted him not until he had torn the flesh almost completely away from the upper and lower part of the hand. He went, in great trepidation, to the head of his own profession. That gentleman certainly was not aware of the extent of the injury, or he would not have treated the matter quite so lightly, for he laughed at the idea of danger from inoculation, and said that, barring the pain, he would exchange situations with him for a pound.

From him the young pupil went to the first surgeon whom, perhaps, this or any other country ever produced,—to whom I owe obligation for the kind exertion of his skill with regard to myself, but whose off-hand and careless opinion given on this occasion I never could reconcile to my own feelings. "Oh, there is no fear of hydrophobia," said he, "for rabies cannot be propagated by the bite of an herbivorous animal. Carnivorous animals, and animals that use their teeth as weapons of offence, alone have this power; *yet I would advise you to apply some nitric acid to the part.*" This circumstance, I say, gave me a deep interest in the inquiry respecting the communication of rabies by herbivorous animals.

I find in all of them, so far as the experiment has been tried, the susceptibility of disease. On what principle is the communication of it withheld? Is there a similar fact in the whole compass of medical and surgical practice?—*the power of infection shared with others, the power of communication denied*? But I must not pursue this line of argument, for I have at the beginning of the lecture entered my protest against it.

One thing, however, I must observe,—that it is sometimes exceedingly difficult successfully to inoculate the dog, or any other animal, with the rabid virus. Into the probable cause of this we will hereafter inquire. A gentleman, who was exceedingly anxious to test a former experiment which he had made, took a great deal of pains to inoculate a dog at my hospital from one that was undeniably rabid, but without success. The bro-

ther of Mr. Henry Earle fruitlessly attempted the same thing. I have (but that was an unusual thing) inoculated five dogs from the same rabid one, and not one of them was infected. In fact, I was generally compelled to throw the wretch into the same cage with the mad one, in order to effect my object. So great is the difficulty of succeeding in this attempt, that some professors of the French school have denied that it was possible to produce rabies by artificial inoculation from any animal. Here they were wrong; but there is sufficient difficulty in the affair to prove that no conclusion should be drawn from the *failure*, or from *repeated failures* of artificial inoculation.

With regard to the horse—the rabid animal in this case—I have but few, that will not be regarded as inconclusive experiments to adduce. *I have twice produced rabies in the dog by inoculation with the saliva of a rabid horse;* but I could not carry the experiment farther. In both cases inoculation from the dogs so infected failed. There was an account in most of the journals in 1828 or 1829, of a groom dying hydrophobous from the bite of a horse. I neglected to record the circumstance at the time, and should be exceedingly obliged if any friend would favour me with a history of it, or of similar cases.

Inoculation from the Sheep.—Here I confess that I have been quite as unsuccessful as the French professors. I have inoculated both the sheep and the dog from the rabid sheep, but altogether without effect.

There is, however, a very important fact stated in Gasparin's excellent work on the contagious maladies of sheep. He says "It has hitherto been thought that, while rabies can be communicated from the carnivora to the herbivora, it cannot be propagated by the latter. A fact, however, has lately occurred, which will throw some doubt on the subject. We read in a recent journal (*Le Constitutional,* 10 Juin 1819), "they write from Rome that a shepherd, of Valletri, was bitten by one of his goats which appeared to be labouring under rabies. Some say that the animal had been bitten by a viper, and others by a mad dog. He died in the hospital in frightful convulsions, and with every symptom of rabies except dread of water*."

I wish the account were more circumstantial, but I give it as I find it.

Inoculation from the Ox.—Here I stand on different ground; and the proof of rabies having been produced by inoculation from the herbivorous animal are so conclusive, that the theory of this power being confined to those who use their teeth as weapons of offence, falls to the ground. I would rather speak of other per-

* Gasparin des Maladies contagieuses des Bêtes à Laine, p. 220.

sons' experiments than my own; but *I have succeeded in producing rabies in the dog, plainly and distinctly, by inoculation with the saliva of a rabid ox.*

"Drs. Beddoes and Stock, in the year 1807, accompanied Mr. King, of Bath, to see a rabid cow at Weston, near that city. Mr. King wished to experiment with her saliva, and he inoculated a barn-door hen with it, who, ten weeks afterwards, was observed to run at other fowls, and to refuse her food. She had a wild strange expression, and her eyes were bloodshot. Early in the following day, her legs became contracted, so that she very soon lost the power of standing upright. She remained sitting, with her legs rigid; refusing food and water, and appearing very irritable when touched, and she died in the evening. There was great inflammation about the cicatrices. The trachea and œsophagus were considerably inflamed, and the vessels of the brain distended with blood*."

Here is, plainly enough, rabies communicated to a biped graminivorous animal by the saliva of a cow.

If there remained any doubt about the matter, the following case would remove it.

A cow in the department of Jura was bitten by a dog affected with rabies. Some time after she became dull and refused all kinds of food. She approached to some water that was offered to her, but she could not swallow it.

A woman that had the care of her imagined that some foreign body was lodged in the pharynx and prevented the animal from swallowing, and she thrust her hand into the mouth of the beast, and to the very back part of it, but found nothing. In doing this her hand was slightly scratched by one of the teeth of the animal. It was soon afterwards sufficiently plain that the cow was rabid, and she was destroyed by order of the magistrates.

A year afterwards the woman began to have frightful dreams, in which she thought that she was pursued by two enraged animals,—the cow, and the dog by which she had been bitten. She soon became hydrophobous, and died in a state of horrible suffering.

Then it appears that herbivorous animals are capable of propagating the disease; and I do not hesitate to express my conviction, that *every animal capable of being affected by the disease can propagate it.* On a subject, however, so important I crave your aid, and would endeavour to engage you in a course of experiments, so far as you can conveniently and safely pursue them, in order that all doubt may be removed on this interesting point. In the mean time, let me remind you, that you are not justified in

* Medical Gazette, June 1828.

exposing yourselves, and much less your assistants or servants, to danger. Simple or common medicine should in no case be given. It is playing with the disease, and compromising your own safety and that of others. A dose of physic or a little nitre will be utterly powerless, and the exhibition of them nothing can excuse. If you wish to try some new or potent drug, let it be placed in the food or the water,—in the latter it will seldom be refused. I do not know that even the thickest or longest glove would afford sufficient security to justify you in attempting to ball a horse with regard to whom there is the least suspicion of rabies; for there is often, even in the earliest stage, a degree of treachery about the rabid animal, and particularly the rabid horse —a deeply-laid plan to lull suspicion, and assuredly to accomplish mischief—of which they only who have watched the progress of the disease can form an adequate conception.

ON THE TRANSMISSION OF SOME DISEASES FROM ANIMALS TO THE HUMAN SPECIES.

By M. Lavergne, *Assistant Professor at Toulouse.*

I have no intention to give a detailed history of contagious diseases; I mean only to speak of their transmission from the brute to the human being,—to hint at the different opinions of authors on this subject, and to add some new facts, which, from their nature and rare occurrence, seem to deserve to be known. I will say little of the cow-pox, which, in the opinion of all medical men and veterinary surgeons, possesses the property of being transmitted to man by inoculation, and, having been so transmitted, preserving him from the small-pox. It is to Jenner that we owe the discovery of the cow-pox, and the benefits resulting from its application. I will only remark that, in passing from the cow to the sheep, it acquires a new character—its march is more rapid, and it loses its anti-variolous property.

I may, perhaps, be permitted to say a word or two of the etiology of cow-pox. According to Jenner, this disease is produced by the transference and inoculation of the matter of grease from the heels of the horse to the teats of the cow, by means of the hands of the person who, having dressed the former, afterwards milked the latter. This opinion seemed to be confirmed by the experiments of the younger Godine, who believed that he had produced cow-pox by inoculating the cow and the sheep with the serous fluid of grease; and he particularly relied on the following fact:—a coachman, that had not had small-pox, and who attended on a horse having grease, had a pustular eruption on

his wrist. This eruption was seen by some medical men, who, struck with the great resemblance of the pustules to those of cow-pox, inoculated two infants with the matter which they contained. True cow-pox supervened in both of them, and the matter taken from the pustules served for many subsequent vaccinations.

Other experiments, however, made at the same time and with the same view, were far from confirming the opinion of Jenner and Godine. In order to remove every doubt as to the production of cow-pox by the matter of grease, it was necessary to institute other experiments—to vary them—to note the intensity of the disease, and the character of the matter used and produced. Without these precautions the public mind would have long continued in doubt.

Whatever was the result of these experiments, it may be useful to observe that this disease in the cow is dependent on various atmospheric influences, on the humidity of the soil, on the exposure to certain winds, &c., and that it appears on many farms on which no horses are kept*.

Every one knows that rabies—that most fearful disease—may be spontaneously developed in some of the carnivora, as the dog, the wolf, &c. That these animals can, by their bite, transmit the same disease to the human being, we have too numerous proofs. The rabid virus appears to reside in the saliva, or

* Dr. Jenner undoubtedly believed that the sanious fluid of grease was the original virus, and that the cow-pox in the cow itself was nothing more than a casual inoculation produced by her lying down in a meadow in which a greasy horse had been previously feeding, and her udder coming in contact with the discharge that had dropped there.

Dr. George Gregory, so late as the year 1825, in his *Practice of Physic*, says that "it is highly probable that the cow-pox is only a secondary disease in cows; that, originally, it is an affection of the hoof of the horse communicable to man directly, or to him through the cow. It has, however, been proved beyond doubt, that cow-pox has been found when the attendants on the cows could have had no communication with greasy horses, nor, in fact, with any horse, sick or well, and where the cows had no access to pastures on which horses had been fed for many years before."

Some medical men may reason from most imperfect information or analogy; but I believe that there is no veterinary surgeon, whose life is spent amidst these diseases, who believes that there is the slightest connexion between cow-pox and grease. Still, however, there is one undoubted fact, that from time immemorial, farriers and blacksmiths that have been infected by grease, have been considered unsusceptible of variolous contagion; but this only proves that there may be other animal poisons possessing the preservative power of the vaccine matter. There is no connexion between the two, and while the matter of cow-pox does its duty with such unvarying certainty and with so little danger and disturbance of the system, we shall not trouble ourselves to look for other preventives.—Y. See *Good's Study of Medicine*, vol. iii, p. 59, and *Youatt on Cattle*, p. 556.

rather to be nothing more than an altered state of that fluid. M. Renault dipped a lancet in the saliva of a rabid dog, and then plunged it into a fold of the skin of a horse. At the expiration of eighty-six days that animal became rabid. Before this, MM. Magendie and Breschet had inoculated two dogs with the saliva of a man that died hydrophobous. One of them became rabid eight days after the inoculation.

Rabies may be communicated to all herbivorous animals; but they are incapable of propagating it in their turn, whether it be among animals of their own species or others*.

Glanders presents itself under an acute and chronic form. It was formerly regarded as extremely contagious in its chronic form. Some time afterwards it was less dreaded; and cases of infection from chronic glanders were considered to be rare. At the present day, the greater number of veterinarians assure us there is no danger about it.

As to acute glanders, it is a very different affair; it is justly considered as highly contagious among animals of the same genus, the horse, the ass, and the mule. How is it with regard to the human being? This is a question as yet undecided. The facts which are adduced in favour of contagion are neither numerous nor precise.

The Journals have lately contained some accounts of the supposed communication of it to the human being. That which made the greatest impression was related by M. Rayer, in the Academy of Medicine, in February 1837. It gave rise to a brilliant discussion, in which MM. Rayer, Velpeau, and Dupuy were ranged on one side, and MM. Barthelemy and Bouley on the other. It had respect to a singular malady of which a man of the name of Prot had died, and who had slept in a stable in which was a mare that laboured under acute farcy and glanders.

The first three of these Academicians believed that the malady of Prot was the result of contagion. The disease of the quadruped was communicated to the man. They founded their opinion upon the fact, that the disease was different from all others that were known to belong to the human species, and that it had considerable analogy with the symptoms and lesions of glanders and farcy. A mare had been inoculated with matter taken from the pustules which appeared on the poor fellow, and ulcers were produced that seemed to be identical with those of glanders.

The others, and particularly M. Barthelemy, could not trace any resemblance between the malady of Prot and glanders in the

* The statement of M. Levergne is here literally translated. Other opinions are maintained in the Lecture at the beginning of this number.—Y.

horse. They thought it strange, if the transmission was possible, that the annals of veterinary medicine did not contain a single case of it. All the editors of the *Recueil de Médecine Vétérinaire* shared in the same opinion. However ingenious might be the discussion, which turned on one fact alone, nothing conclusive could be drawn from it respecting the communication of glanders from the horse to the human being*.

For a long time veterinary surgeons have maintained that glanders and farcy have many traits of resemblance—are produced by similar causes, and are, in fact, kindred diseases. M. Renault has lately maintained this ground in the *Recueil de Médecine Vétérinaire.* I confess, however, that the two maladies appear to me to present altogether different symptoms. If they exist at the same time in the same animal, yet each pursues its own course. The one is ordinarily cured by nature or by art,—the other bids defiance to all medical treatment. There is only one method of demonstrating the identity of these diseases, and that is by repeating the experiments of Coleman and Withe, who produced farcy by inoculation with the matter of glanders, and glanders by inoculation with that of farcy. One difficulty, however, opposes itself here—farcy and glanders have lost the contagious character which they once possessed; at least, this has been said and repeated, and we have been taught to believe it.

I am of the opinion of M. Renault, and those who with him disbelieve in the contagion of chronic glanders; but as for farcy, I cannot agree with him, or rather, I am compelled to acknowledge that it is contagious. My opinion is based on the experiments on the effect of inoculation with farcy matter, made at Lyons by Gohier, and by which he established, in the most positive manner, the contagious nature of this disease; and also on experiments of my own, which I made in 1833, on some horses belonging to the 7th Regiment of Artillery, when I was in garrison at Lyons.

On the first of September in that year, I took some matter from a horse affected with chronic farcy, which I introduced under the epidermis of three glandered horses (in the second degree) by means of many punctures on the side of the neck and under the jaws. On the second, there was not the slightest appearance of inflammation, and the minute wounds had cicatrized. On the

* See the review of Dr. Rayer's publication on this subject in the first and second numbers of THE VETERINARIAN for the present year. We hope, in the next or following number, to be enabled to present our readers with the post-mortem appearances, accurately coloured, which were found on the dissection of this poor fellow.

12th, however, hot and painful swellings appeared on the three animals at the place of inoculation. These tumours rapidly enlarged. Some of them reached the superior part of the neck, and others extended down to the chest, leaving between them a well-marked space, and which gave them the form of a knotted cord. Those which formed under the jaws extended up the cheeks to the very eyes, following the course of the glosso-facial vein; they also penetrated into the nasal cavities, where they produced ulcers, rising above the surface, and with elevated edges, and essentially differing from the chancres of glanders. Twenty or twenty-five days after the inoculation most of these tumours or buttons had ulcerated, and I could perceive no difference between them and those of spontaneous farcy, either in their symptoms or progress. The glanders did not appear in the slightest degree modified by this new malady, but each followed its ordinary course. Neither of these animals was able to resist the united influence of these two diseases; they rapidly wasted away, and were destroyed on the 1st of the ensuing December.

It is true that there are contradictory experiments; but will negative facts destroy the evidence of positive ones? I think not.

If, however, farcy is contagious among animals of the same species, is it so with regard to man? Some facts, although few in number, shew the possibility of the transmission. M. Vogeli has related some in the *Journal de Médecine Vétérinaire*, which are worthy of the fullest credit. I witnessed some of them, and particularly the sad fate of the student Couderq; and I can affirm that the account which he has given is true to a letter. He has added nothing, he has embellished nothing. I was present at the last moments of this unfortunate young man, taken so early from his friends and from that science of which he promised to be one of the proudest ornaments. I saw all the hideous symptoms of the disease which tore him from us; and although there were some symptoms which are rarely seen in the horse, I was struck with the resemblance between the malady under which he laboured and farcy in the quadruped,—an analogy sufficient to force on me the conviction that poor Couderq died in consequence of inoculation with the matter of farcy*.

* The interesting and romantic account of the illness of this promising young man will be found in the 8th volume of the VETERINARIAN, p. 214. I hardly dare trust myself to speak of the impression which it made on my mind. It did M. Vogeli immortal credit, and I hope to live to tell him so. His were the feelings which ought to bind us together in the promotion of our common art.—Y.

One of my fellow-students at Lyons, M. Givors, of Pont-du-Veyle, also wounded himself in opening an ass that had died of farcy. A little time

Whether mange is produced by an insect of the Cheyletidæ family, and the Sarcoptes genus—the Acarus Scabiei—or whether that insect is the product of the disease, is a question on which I will not now enter, but will only glance at the possibility or probability of the contagious property of mange, and its being occasionally communicated from the quadruped to the human being.

M. Hurtrel D'Arboval, in his Dictionary, cites many facts which establish the possibility of this transmission: they are borrowed from various journals, and related by scientific practitioners. I would beg to add two others which are in my mind conclusive, or, rather, to which no reply can be given.

Case I.—May 16, 1837, a horse destined for dissection was given to six pupils of the anatomical class. He was covered with mange, and the acari could, even with the naked eye, be seen running over him. In pursuing the dissection, every one of these young men felt an itchiness on the hands and wrists for which they could not satisfactorily account. They told me of the circumstance—I answered that it was probably nothing but their imagination. During the whole of the day they continued to scratch themselves, and they could not sleep at night on account of the intolerable itching. In the morning numerous pimples were evident on the wrist and between the fingers, and which were immediately recognized by M. Latour as the pustules of itch. They were hard and red at the base, and the summit contained a limpid serous fluid. Two or three days after this eruption, a new and more tormenting one appeared on the abdomen, on the inside of the thighs, at the bending of the knees, and, more or less, almost all over the body.

They were separated from their companions, and subjected to the ordinary treatment for that malady ;—cooling medicine, warm baths, and frictions with the citrine ointment*. The cure was not perfected until the 13th of the following month.

afterwards, buboes, buttons, or pustules very similar to those of farcy, appeared on various parts of his body, and one, on his forehead, was as large as a nut. He weathered the storm; but I recollect that he long retained the pale and bloated countenance *(bouffisure)* which we observe in persons of a lymphatic temperament, and bordering on a scrofulous diathesis.—*R. B. B., Editor of the Journal du Midi.*

* The French formula for the preparation of this ointment is as follows:

℞ Lard	.....	16 parts.
Fluid mercury	...	1 do.
Nitric acid	.....	1½ do.

Dissolve the mercury in the acid by the assistance of heat, and when the solution is cold, triturate it well with the lard in a porcelain mortar. The quantity of lard is increased or diminished according to the state of the case.—Y.

Case II.—On the 18th of December, in the second year, another mangy horse was assigned for dissection to another class of pupils. Two of them soon began to feel considerable itching in the arms and wrist, and small pustules appeared on these parts on the same night. Dr. Latour recognized them on the following morning as the eruption of itch. They also, on the next day, found that the pimples were becoming very numerous on the abdomen, and bending of the knees and various other parts.

They were submitted to the same treatment; but it was not until the 26th of January, 1838, that they were perfectly cured.

I searched for the acarus on each of these young men, but I could not find it; I could not even discover the depression in which it is said to be lodged: yet there can be no doubt that the disease was produced by this insect received from the horse. In both cases the itching commenced in a very few minutes after the young men had set to work on the mangy horses.

No author that I am aware of has treated of *Dartres* with reference to its communication from the quadruped to the biped. Some regard it as contagious between animals of the same species, others altogether deny its contagious property. Four cases, however, that have come under my notice, afford sufficient proof that it is contagious, not only as regards animals of their own species, but human beings*.

Case III.—December the 2d, 1837, M. Fourcade, of Balina, brought a Gascony cow to our hospital, aged seven years, and accompanied by her calf, two years and a half old, which she was then suckling. This young animal had around its eyes, on its ears and cheeks, and on its withers, some grey scabs with well-defined borders, and beneath which were little pustulous pimples, from which an ichorous fluid exuded, speedily becoming concrete. The parts occupied by these scabs were devoid of hair. From these symptoms we recognized the pustulo-crustaceous (*crôuteuse*) *dartres*.

* It is difficult to explain to the English reader what the French veterinarians understand by the term *dartres*. It is an inflammation of the skin, characterized by little red prominences (*boutons*), pustular or vesicular, and which unite into patches of greater or less size, and of various forms, commonly rounded, with more or less itching, and which ultimately produce a kind of farinaceous powder, or epidermic exfoliations, or scales, or scabs, and occasionally with an ichorous discharge, or even degenerating into ulceration. In the last case, the hair frequently comes off, and is not always replaced. The skin at the situation of the *dartres* is rough, and generally a little tumefied. The surfeit of the British horse, and the denudation of hair on the ears and eyelids of dogs, would probably be characterized by the term *dartres*.—Y.

The owner told us that the little animal had had this disease about a month and a half, and that the same had begun to appear on the mother fifteen days before. We examined some of these scabs about her teats and under her belly, and they appeared to be of the same nature with those on the calf. They evidently proceeded from him, and in the act of sucking had communicated to his mother the disease by which he was himself affected.

That, however, which most surprised us was the assurance of M. Fourcade that one of his brothers, who had been in the habit of feeding and milking the cow, and also one of his children, that had been accustomed to play with the calf, had caught the *dartres* both on their wrists and their arms. The eruption had been observed about four or five days, and, in his opinion, had been given to them by the cow and her calf. His little boy, who had accompanied him, shewed us his arm, on which we saw several red prominent spots whence a reddish serosity exuded, forming patches as large as a five-franc piece.

Case IV.—On the 20th of the same month, M. Cirrè, of Minimas, brought to us another cow, followed by her calf two months old, that had had this scabby eruption on its forehead and withers about a month. The cow also had eruptions on her teats, her dewlap, and her lips; but they had not appeared more than five or six days. We concluded that the disease had, as in the former instance, been communicated from the calf to its mother.

Some time afterwards, this opinion was confirmed by the appearance of an eruption of the same nature on the thigh of the farmer, and on the wrist of his wife.

Case V.—On the 20th of January, 1838, I went to the dairy of M. Barrot, of Terre Cabale, to examine several cows that had the *dartres*. The cow-house was small, low, ill-ventilated, and unwholesome. It was divided by a wooden partition into two compartments; the one, and the smaller of the two, being destined for the calves, and the other containing the cows. It admitted neither air nor light, except through the door, and that was generally closed.

I saw there three calves from two to three months old, and all of them having the *dartres*—one about the neck and ears, another on the forehead and the back, and the third on the forehead and the thighs. Instead of the large scabs which I had seen in the former cases, they were covered with small scales and slight epidermoid exfoliations, possessing all the characters of *furfuraceous dartres*.

On my inquiring into the probable causes of this disease, I was

told, that, in the month of April of the last year, he had bought a calf labouring under this disease, which he had imprudently placed among his home-bred cattle, and to which it had transmitted the disease. They had communicated it to others; and, from that time, his calves always had the *dartres*. At one time he sold them all and bought others, in order to rid himself of the nuisance: but, in spite of this precaution, the disease broke out on the new-comers; and this convinced him that the disease could also be communicated by mediate contact.

In the course of feeding these animals, Barrot himself had eruptions on the wrist and around the eye: his wife also did not escape infection. They were thoroughly convinced of the contagiousness of this malady; and when they were compelled to touch the calves, they did it with a great deal of caution, and immediately afterwards washed their hands with vinegar or soap.

Case VI.—On the same day M. Blanc, of Croix-Dausade, requested me to examine five calves, from three to three and a half months old, which he had in a corner of his stable. They all had the furfuraceous *dartres*, and on various parts of their bodies.

On the 15th of November M. Blanc had purchased a calf that had the *dartres*, and had placed it with the calves of his own breeding. They were all infected in the space of seven or eight days. He himself was not exempt from the contagion, for he had on his arm an eruption that sadly incommoded him by its itching.

Being from other illness compelled to take to his bed, his wife had the management of the calves; and in the course of eight days she began to have a tormenting itching along her neck and the course of the spine. There were many little swellings (*boutons*) uniting into patches, and permitting a limpid fluid to escape, which, hardening, formed numerous little scales resembling the husks of bran. I never saw *dartres* so extensively spread as on the husband. He had some as large as a hand—others of the size of a six-franc piece; some being isolated, and others united by their edges.

These four last cases appear to me sufficiently to confirm the contagiousness of *dartres*. In another article I shall touch on the contagiousness of charbon, and of malignant pustules.

Journal du Midi, Fevrier 1838.

THREE FATAL CASES OF PUERPERAL FEVER.

By Veterinarius.

[The writer of this Essay is well known to us, and is a good man and true, otherwise we do not like these anonymous contributions. There are many practitioners in the country who would give a better answer to his queries than we can. Our *friend* at Walsall could easily resolve the difficulty.—Y.]

I beg to transmit three fatal cases of puerperal fever in cows, which occurred in my practice, according to their respective dates, owing to the want of constitutional energy to withstand the disorder until the bowels were acted upon. I should wish to know, in these extreme cases, what plan you would pursue in order to excite the bowels to action, as, according to your opinion, and that of the majority of the gentlemen who were present at the meetings of the Veterinary Medical Association in June last, when Mr. Dauber read an Essay on Puerperal Fever, the bowels were to be freely evacuated. Now, I consider, after the cow is down, you will find it not such an easy matter to purge as some of those gentlemen seemed to think, for, in the subjoined cases, the paralysis was not partial—or, in other words, the hind parts only affected—but the whole system seemed to me to be included. As none of them seemed to speak of powerful external stimulants, I venture to hint that, if the actual cautery were employed to the abdomen in some extreme cases, beneficial effects might accrue therefrom, as, by exciting an intense inflammation externally, you would lessen the inflammation so frequently found in the brain and spinal cord. This is a plan which I have not yet tried, but, in my next case, I certainly will, and you shall hear of the result.

CASE I.

On February 12th, 1838, at midnight, my attendance was required on a cow that had calved about two hours previously. Owing to the severity of the frost and snow, I was obliged to walk—it was a distance of two miles—but, notwithstanding this, I saw my patient about half past twelve. When I arrived she was down, heaving a little at the flanks, with a full, hard pulse, about 60, and having, seemingly, lost all power in both her fore and hind extremities. I bled her until the system was affected, and then administered the following purge in warm gruel:—℞ magn. sulph. ℔j, croton farinæ, gr. xv, sem. carui et pulv. zingib. āā ʒij. I also applied a mustard cataplasm with

turpentine over the back, including a part of the dorsal and the whole of the lumbar region, and ordered her to be drenched with plenty of warm gruel, and covered up warm with straw, &c. The secretion of milk was suspended. About six hours afterwards she was raked and clystered, and half a pound of magn. sulph. with ten grains of croton farina, and double the former quantity of the aromatic, were given. The sight of both eyes was gone, and the head was continually thrown back on the spine. The pulse had risen to about 120, and was full. I bled her again, when she seemed rather more tranquil. Nothing passed through her, and she died about 10 A.M.

Post-mortem appearances at half past 3 P.M. *of the same day.*—The lungs were in a state of congestion, and nearly black. The abdominal cavity presented a healthy appearance, with the exception of an enormous gall-bladder, and that distended nearly to bursting, with perfectly healthy-looking bile. The pelvic cavity was healthy. The spinal cord presented an appearance of rottenness, with an effusion of a dirty grey-coloured fluid throughout the whole of the lumbar portion. The vessels of the brain were injected nearly to bursting.

CASE II.

May 5th, 1838.—I was called about 11 P.M. to attend a cow that had calved in the morning of the previous day. She was observed to be shifting her feet frequently; trembling and staggering in her walk; and she had not been observed to ruminate during the day. She was in very high condition, having been frequently allowed a quantity of barley in the sheaf for the express purpose of giving her a good show (a large udder), as the owner intended selling her with the calf at the next market. She was an excellent milker, and about eight years old.

She had been bled by the farmer before I arrived. I found her considerably uneasy, with the pulse very little above the natural standard, and scarcely to be felt. I abstracted about three pints of blood more, when the pulse fluttered, and the cow threatened to fall. I then stopped the bleeding, and placed a sheep-skin over the loins. The cow now became very uneasy, and fell. I gave her the same purgative medicine as in the former case, in gruel. I saw her bedded up warm, and ordered gruel to be given every hour, promising to call early in the morning.

On the following morning I attended at six o'clock. I found that the bowels were still in a constipated state—the cow grinding her teeth—the sight quite gone—deglutition very difficult, and the breath dreadfully fœtid: they had given her about two quarts of a very strong decoction of groundsel (*senecio vulgaris*),

in the anticipation of its producing a purgative effect, for I had told the owner that there was no chance for the cow unless the bowels could be opened. I requested that a person might be sent with me for another drench to be given immediately on his return, when a messenger in post-haste arrived, requiring my attendance on a cow similarly affected, which case I will relate as No. 3. I sent eight ounces of castor oil, with a pound of muriate of soda, and ordered the cow to be raked.

At 3 P.M. she was lying stretched at full length, fast sinking, with a viscid foam issuing from the mouth and nostrils. She died about 1 A.M. on the 7th, without a struggle, and to the very close of the case the bowels were not opened.

CASE III.

May 6th, 1838.—I attended, about eight o'clock in the morning, the cow alluded to in the last case. On my arrival I found her down, with the sight of both eyes gone; the breath intolerably fœtid; complete paralysis of the fore and hind quarters; the pulse full and bounding; respiration scarcely hurried; the teeth constantly grinding, and the bowels constipated. I bled her to about four quarts, and gave her a pound and a half of Epsom salts, half a drachm of croton farina, and two drachms each of powdered caraway and ginger. I ordered her to be kept warm, and frequently drenched with gruel.

At 2 P.M., the bowels not being opened, I gave her a pound of muriate of soda. She was quite unconscious, continually tossing about the head, and her eyes sunk in their orbits. At 7 P.M., the bowels being still confined, I gave the following:—Cape aloes, four drachms; Epsom and Glauber's salts, of each four ounces, with two drachms of ginger, in warm gruel. She was also raked and clystered with warm soapy water and salt, and the clysters were ordered to be repeated every two or three hours. The bowels could not be acted on, and she died about 4 A.M. on the 7th. She had calved on the 5th, without difficulty, and all appeared to be going on well.

Remarks.—The subjects of the first and second cases were in very high order, and had been kept on very stimulating food for two or three months previous to calving. The third was not in such high condition, but had been kept on the forcing system in a field of fine grass, and allowed two or three sheaves of oats per day for three months previously. I consider that the digestive organs were much affected in these cases, for the barley and oats were drawn from the cows when raked, mixed with the excrement, just in the same state as when swallowed, which circumstance is never observed in the fæces of a cow when in a state of health.

THE GREAT SPINAL ORGANIC NERVE (THE PNEUMO-GASTRIC) IN CATTLE.

By Professors Gellé *and* Lafore, *of the Toulouse School.*

[While, from its proximity to the French metropolis, and other causes, the attention of the veterinary school at Alfort has been chiefly, and, at length, almost exclusively devoted to the anatomy and pathology of the horse, a subsidiary school has been established at Toulouse, in which, although the horse is not neglected, cattle and sheep are the principal objects of attention. Such must ere long be the case in another land, if the medical treatment of these latter animals, so intimately connected with the welfare of the farmer and the interests of the country, continue to be either entirely neglected or inefficiently taught.

The professors of the Toulouse school, and many of the veterinarians of the neighbouring districts, at the commencement of the present year, united to establish a new veterinary journal, in which no branch of veterinary science should be neglected, but which should be especially devoted to the objects for which that school was established.

We have an unfeigned and great respect for the professors of the Alfort school. We have reason to know that it is excellently conducted, and that the professors honestly and unremittingly labour to accomplish the purposes for which it was established. They are ever at their post, and their heart is in the cause. They ought not—and they will not be jealous, either of the new school or its journal. Their common cause will be more effectually promoted. We shall continue to prize the *Recueil*—the journal of the metropolitan school—for the information which it has afforded us, and continues to afford, on every branch of the veterinary art; but, at the same time, we shall glean from the new periodical many an article, with reference perhaps to the horse, but oftener relating to other animals, which, from circumstances that could not be controlled, were not always regarded as they deserved.—Y.]

In order better to comprehend the peculiarities of this nerve in the ox, we will transcribe the description which is given of it in the horse by M. Girard.

" In escaping from the cranium through the occipito-temporal foramen (foramen lacerum basis cranii), the tenth pair of nerves, (the pneumo-gastric) are re-united with the ninth and eleventh (the glosso-pharyngeal, and spinal accessory); their branches of

communication multiply, and they assume much of the form of a plexus. From the guttural plexus which it traverses, the pneumo-gastric sends branches to the carotid, the ganglions of the great sympathetic, the larynx, and a branch common to the pharynx and the larynx. In the thorax it furnishes branches to the tracheal and cardiac plexuses, and a long recurrent one which re-ascends to the larynx. Having arrived at the division of the bronchi, the principal trunk (according to this author) forms the bronchial plexus, and then divides itself into two branches which follow the œsophagus and constitute the œsophageal nerves. Within the abdomen these nerves exchange some communicating branches; they then ramify round the cardiac orifice of the stomach, and form a ganglioniform plexus there. After this intermingling of fibres, they give out a multitude of branches, among which should be particularly mentioned those which are distributed on the membranes of the stomach, or which ramify in the pylorus, or go to the hepatic plexus, and, finally, the two or three small branches which are carried on to the cœliac plexus" (the semilunar ganglion).

The pneumo-gastric nerve in the ox has the following peculiarities:—

Before it escapes from the cranium, and opposite to the occipito-temporal foramen, it presents *a ganglion of a somewhat flattened and variable form, and of a grey colour.* The *pharyngeal* branch (which, as in the horse, sends a division to the larynx), and the superior *laryngeal anastomose with certain branches of the tracheal recurrent.* The anastomoses of this nerve with the superior laryngeal take place *on the internal surface of the thyroid cartilage,* and that which connects the pharyngo-laryngeal with the recurrent, ascends at the base of the larynx to *a level with the first cartilaginous ring of the trachea.*

On arriving at the termination of the œsophagus, and in a direction towards the rumen, the *inferior* œsophagean nerve gives out a branch which, without touching the paunch, *gains the inferior surface of the liver, on which it ramifies, and terminates in two branches, one of which is directed to the gall-bladder, and the other to the duodenal portion of the small intestines, where it follows the ductus choledochus.*

Having arrived at the anterior part of the rumen, the pneumo-gastric nerve forms a vast ganglionic plexus, from which emanate *four or five considerable branches, which ramify over every part of the different stomachs,* and some filaments of which are given to the semilunar ganglion and the great mesenteric.

The recurrents pass between the lymphatic ganglions, which are situated at the entrance of the thoracic cavity. M. Girard

inquires, whether the compression of these nerves, by the enlargement of these ganglia, may not explain some cases of roaring, so frequent in the horse. If this hypothesis is founded on truth, the anastomoses in the ox between the recurrents and the superior laryngeals may well explain the rareness of this disease in the ox.

Journal de Vét. du Midi, Fevrier 1838.

THE GREAT SYMPATHETIC, OR GANGLIAL NERVE, (LE NERF TRISPLANCHNIQUE).

From the Lectures of MM. Gellé *and* Lafore, *of the Toulouse School.*

This nerve forms a complete system of its own. It presents at different points various ganglia, which are considered by physiologists as so many centres of nervous influence, and from which proceed branches by which the ganglia are reciprocally connected together—branches which are distributed to certain organs, and those which unite the organic system with the cerebro-spinal.

The physiological importance of this nerve cannot for a moment be doubted. It forms ganglionic plexuses at the origin of the principal arterial trunks, and it sends branches to every organ of involuntary action and function.

It had been long believed that the lungs were an exception to this general rule, and that they did not receive any filaments from the ganglial nerve; but a careful dissection of a horse, made by M. Hugier in 1833, proved the contrary. This skilful anatomist demonstrated a branch of the *trisplanchnique* proceeding from one of the three first thoracic ganglia, and directed to the bronchial plexus, which it contributes to form by uniting with some of the divisions of the pneumo-gastric.

The Toulouse school has since taught that this branch sometimes emanates from one of the inferior cervical ganglia.

Another anatomical fact, the discovery of which we claim for our school, is the existence of another branch of the trisplanchnique not before observed. It proceeds from one of the inferior cervical ganglia, and unites itself with the diaphragmatic (phrenic) nerve, and which is itself formed by the union of two branches proceeding from the sixth and seventh cervical nerves. This anatomical point has been often verified in dissections of the horse and the ox. Possibly this may furnish new light to the physiologist in the explication of the important function of respiration.

Journal des Vétérinaires du Midi, Avril 1838.

ACCOUNT OF THE ANNUAL SALE AND DEATHS OF HORSES IN A REGIMENT OF HEAVY DRAGOONS.

The following extract is taken from the "Edinburgh Medical and Surgical Journal," No. 335. Mr. Marshall deserves great credit for having directed attention to a subject of so much interest to the public service, and so important in comparative pathology.

The object of this paper is to submit some statistical facts in regard to —— Regiment of Heavy Dragoons, for a period of eight years; and, in so far as one corps may serve as a type or symbol of the cavalry in general, the results cannot but be interesting.

Table I.—The ages of the horses belonging to the regiment in question, according to the register in 1836 and 1837:—

1836.				1837.			
Age.		No.	Years.	Age.		No.	Years.
3	years	× 8	= 24	3	years	× 13	= 39
4	do.	40	160	4	do.	23	92
5	do.	6	30	5	do.	22	110
6	do.	13	78	6	do.	33	198
7	do.	9	63	7	do.	16	112
8	do.	17	136	8	do.	10	80
9	do.	24	216	9	do.	4	36
10	do.	13	130	10	do.	17	170
11	do.	20	220	11	do.	20	220
12	do.	15	180	12	do.	12	144
13	do.	14	182	13	do.	13	169
14	do.	30	420	14	do.	10	140
15	do.	15	225	15	do.	11	165
16 & above		9	144	16 & above		38	608
		233)	2208			242)	2263
Average age			....9½	Average age			.....9⅛

From the above table, it appears that the mean age of the horse is about 9½ years.

TABLE II.—The amount and ratio of mortality among the horses, together with the number and ratio of horses cast (discharged) in consequence of disabilities.

Years.	Strength.	Died.	Ratio of Deaths per Cent. of the mean Strength.	Cast.	Ratio of Horses Cast per Cent. on Account of Disabilities.	Reduction of Horses by Death and Disabilities per Cent.
1830	245	6	2.4 or 1 in 41	16	6.5 or 1 in 15	8.9
1831	256	12	4.6 or 1 in 21	15	5.8 or 1 in 17	10.5
1832	268	10	3.7 or 1 in 27	13	4.8 or 1 in 20	8.5
1833	267	6	2.2 or 1 in 44	20	7.4 or 1 in 13	9.7
1834	250	2	.8 or 1 in 125	20	8.0 or 1 in 12	8.8
1835	248	4	1.6 or 1 in 62	35	14.1 or 1 in 7	15.7
1836	238	10	4.2 or 1 in 24	23	9.6 or 1 in 10	13.9
1837	244	8	3.2 or 1 in 30	26	10.6 or 1 in 9	13.9
Total .	2016	58		168		
Mean of eight years .. 252		7 and 2-8ths	2.8 or 1 in 35	21	8.3 or 1 in 12	11.2 or 1 in 9

This table shews that the average annual strength of the regiment was 252, the average deaths 7.2-8ths, the centesimal ratio of deaths 2.8, the mean annual number of horses cast 21, the centesimal ratio of cast horses 8.3, and the mean annual reduction of the regiment by death and casting 11.2 per cent.

TABLE III.—The causes of the deaths which took place among the horses during a period of eight years.

Fatal Diseases and Accidents.	*Died.*
Diseases of the brain (staggers)	4
Lock-jaw (trismus)	2
Disease of the lungs	23
Hydrothorax (water in the chest)	1
Disease of the abdominal viscera	3
Shot on account of	
Farcy	3
Glanders	6
Fracture of a leg	6
— a coffin-bone	1
— a knee (patella)	1
— the skull	1
— the pelvis	1
— the haunch-bone	2
Injury of the spine by a fall	3
Injury by a cart	1
Total Deaths	58

From this table it is obvious that affection of the lungs is by far the most fatal disease among cavalry horses. Two-fifths of the mortality have a pulmonary origin.

TABLE IV.—The number of horses cast during eight years; together with the disabilities which rendered them unfit for cavalry duty.

Disabilities.	Cast.	Proportion of Cast Horses to Strength.	Mean Age of Horses Cast.	Extreme Ages.
Lameness	67	1 in 30	About 10	3 to 15 years
Worn out	33	1 in 61	.. 15	10 to 20 ..
Blindness	22	1 in 91	.. 9	5 to 17 ..
Broken winded	20	1 in 100	.. 11	8 to 16 ..
Unhealthy constitution	14	1 in 144	.. 10	7 to 16 ..
Vicious disposition, (chiefly kicking and biting).....	9	1 in 224	.. 9	5 to 12 ..
Slowness of pace	3	1 in 672	.. 8	7 to 10 ..
	168	1 in 12	10 years	

The mean age of the horses cast, as stated in the above table, is 10 years; and the mean age of the horses in 1836 was 9½, and in 1837 9⅓ years.

Cast horses, although unfit for cavalry duty, may be useful for many other purposes. They are commonly sold by public auction, and bring, on an average, about £8 or £9 each.

Lancet.

SANGUINEOUS APOPLEXY IN A SOW.

By M. CARRERE, *M.V., Labastide (Hautes Pyrénees).*

A sow fifteen months old, and in good condition, had been fed in the morning as usual with wash and bran, and was then turned into the meadow with the other swine of the villages. She had scarcely been there a quarter of an hour ere the swineherd observed that she crawled very slowly along, and held her head low: he immediately drove her home.

I happened to be in the neighbourhood, and was desired to examine her. She appeared to me to be really ill—her head seemed to be very heavy—the eye haggard and inflamed, with its vessels much engorged, and her walk was uncertain and staggering. As I was observing her and talking with the swineherd, she, all at once, elevated her head, ran against the wall, and fell on her side, stretched at her full length, and there she lay motionless as if she had been struck by lightning. They assured me that they had no suspicion of poison.

I raised her head and opened her eyelids. The eye rolled

rapidly in the orbit, and her limbs were slightly agitated. Her respiration was exceedingly laborious. The appearance of the eye made me suspect congestion of the brain; I therefore determined to bleed her. Knowing how difficult it was to obtain blood in sufficient quantity from these animals, I cut off her tail*, and arterial blood was evacuated in minute jets, but which soon afforded as much of the vital fluid as I wished to abstract.

Half an hour afterwards no change had taken place, except that there was a sudden convulsive motion at the slightest touch of the skin—the pupil was dilated—the optic nerve was paralyzed, and there was considerable grinding of the teeth. I determined to try the effect of vomiting, and five grains of emetic tartar were given in a small glass of water. Six minutes afterwards there was violent agitation of the limbs, and spasms of the neck, followed by copious vomiting. Some warm water was administered, and the vomiting was speedily repeated.

The beast now became tranquil, every fearful symptom disappeared by degrees, and, to the great astonishment of the bystanders, the animal got up. She certainly staggered a little as she walked, but she managed to retreat from us to her stye. On the following day she was quite well.

We did not allow her at first any thing but white water with a small quantity of nitre. She speedily fattened, and was killed eight months afterwards, but we took the precaution to bleed her twice or thrice in that time.

Journ. du Midi, Mai 1838.

* It is difficult or almost impossible to bleed a pig from the jugular veins; they lie too deep and are covered with too much fat. No ligature around the neck will raise them, and it would be folly to puncture at haphazard. The veins, however, which run over the inner surface, and particularly the inner border of the ears, may be opened without much difficulty. The ear must be turned back on the poll, when one or more of the veins may be made sufficiently prominent by the pressure of the finger near the base of the conch. The cephalic and the saphena veins may be opened without any very great exertion of skill; but the best place, when it is desirable to abstract a considerable quantity of blood, is the palate. The flow of blood may be readily staunched by means of a little pledget of tow and a string, as in the horse. The cutting off a portion of the ear or the tail, seems to be an unprofessional and barbarous way of proceeding.—Y.

THE VETERINARIAN, JUNE 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

It has rarely happened that so many subjects connected with the onward progress of our profession force themselves on our notice as at the present moment. The Government has at length recognized the Edinburgh Veterinary School, and the graduates of that Institution are eligible to hold appointments as veterinary surgeons both in the British and the East India Company's service, subject, as all candidates for that honour have hitherto been, to the approval of the Veterinary Surgeons General of the British or Indian cavalry as to their competency.

This is an act of justice highly creditable to the powers that be; and it is a boon to our profession generally, the importance of which can scarcely as yet be sufficiently appreciated. Placed now on an equality as regards their rank in society, and the objects to which their attention may be legitimately directed, a fair and honourable competition will arise between the teachers and the pupils of the two schools, which cannot fail of insuring the rapid improvement of veterinary science. Each establishment may have, and has its faults, as regards some branches of instruction; but they had not until now been fairly pitted against each other. They had not stood on equal ground, nor had the public attention been sufficiently roused to institute a strict comparison between the advantages and the deficiencies of each. The St. Pancras school had the advantage of its rival, as alone recognized by the Government,—as alone leading to many honourable situations in after-life; and this was calculated to produce a malign effect on both: it would naturally, necessarily produce a degree of carelessness on the one hand, and of apathy on the other. They will henceforth stand on equal ground; for although the veterinary surgeons-in-chief in the British and Indian cavalry, who will have to report on the qualifications of the candidates, belong to the Southern school, we cannot suppose that any unfair preference will be shewn. It would be inconsistent with the

honourable feeling by which men in such situations should be guided, and it would very soon defeat its own object.

In every essential point, then, the two schools will or ought to be on an equality. The public will not only be enabled but powerfully incited to institute a strict comparison between them; and no long time will pass, ere the value of each will be justly appreciated, and, dependent upon that, will be the ultimate reputation and prosperity of each. There is nothing like open and honourable competition in order to secure improvement and excellence in every art, and in every thing.

There are doubtless advantages connected with each institution; and it would be folly to deny that there are deficiencies and faults in each. The time of improvement is now arrived; and that school which does not honestly endeavour to increase the one, and diminish or altogether remove the other, will rapidly sink in public estimation, and succumb to its rival. False and hollow professions—promises which never were kept or meant to be kept—will no longer be of avail. The exclusive privilege is done away—the boon, for the sake of which many an error and much dereliction of duty were suffered to pass unnoticed, either school can now confer; and the consequence in both establishments must necessarily be, increased diligence and increased zeal,—the honest discharge of duty, the sterling improvement of the pupil *in every branch of his profession,* and the more rapid progress of veterinary science.

Since the last number of this Journal appeared before our readers, a noble association has been formed, comprising the most influential men of every political party, for the improvement of English agriculture and the branches of science connected with it. It was a beautiful and heart-stirring scene, when a Wellington and a Peel, a Spencer and a Fitzwilliam, forgetting every party difference, cordially united for the promotion of such a purpose. The numbers and influence and power of the association have increased with a rapidity which the most zealous of its members did not dare to anticipate; and it will speedily include the whole body of agriculturists from the Tweed to the Land's End.

The live stock of the farmer constitutes an important division

of his property. To this, among other objects, the attention of the association will be directed.

It has, indeed, been already announced, that no effort will be spared by this association to improve the general management of cattle, sheep, and swine, and particularly the knowledge and treatment of their diseases. This comes home to our business and bosoms as veterinary surgeons. In what way shall we contribute to the accomplishment of this noble purpose, or in what way will our interests be affected by it? Are we competent to assist in this good work? Have we received that fundamental instruction which will qualify us for it?

Here has hitherto been the great blot on the English school. Even in the northern college, the diseases of cattle, I will not say are neglected, but do not form so prominent and laboured a portion of instruction as they ought to do. The able and zealous professor of that school, now commencing, as it were, a new career, will see to it that this branch of our art has all the attention paid to it which its importance demands. In the English school the neglect of it has been perfectly indefensible. The repeated pledges of Mr. Coleman have never been redeemed. The few lectures which Mr. Sewell could, without neglecting the other subjects of his course, bestow on it, were far from being sufficient to prepare the pupil for a scientific and *honest* practice on the diseases of the ruminant. We will venture this public challenge—*Not a student has left the St. Pancras College for many a year, who will say that he was efficiently instructed in the anatomy and physiology and diseases of cattle and sheep.* This is a state of things to which the English Agricultural Association will speedily put an end, and the profession at large should demand it.

If that Association would, like the Highland Society, grant a certain sum from their funds to a third professor, acquainted with the anatomy and diseases of the other domesticated animals beside the horse, this, added to the fees which he would obtain from the pupils, would produce an income with which a young or a middle-aged gentleman would probably be satisfied. Nothing short of this would accomplish the purpose. The anatomy and diseases of cattle, &c. would fully occupy the attention of one teacher; nor could he possibly do justice to his subject if he had lectures

or pursuits foreign to this purpose to engage his attention. It must be a long, connected, well-studied course, uninterrupted by aught beside, that could do justice to the pupil and honour to the institution.

How easily might this be accomplished, and without doing the slightest injustice to the professors! Every thing short of it will be perfectly delusive. The object of the Association could not be accomplished, and the student, and the farmer, and the best interests of the country, would be indefensibly sacrificed. This is a plain straightforward account of the matter, and we challenge contradiction from any one connected with the profession.

The Society for the Suppression of Cruelty to Animals held its anniversary meeting on the 23d ultimo. No fewer than four veterinary surgeons were present; thus testifying their approval of the grand principle on which it was founded. One of them, expressing the sentiments of his brethren, asserted that there was, or ought to be, a kindred feeling between the veterinary surgeon and the members of such a society. The practice and the reputation of the veterinary surgeon were built, in the first place, on science, the appreciation of which, however, must be left to his employers and friends; but there was a broader, surer basis,—humanity. The objects which he professed, and which he zealously laboured to accomplish, was the removal of pain, and the prolongation of life, and the increase of enjoyment; and, when he succeeded in this object, he necessarily regarded his patient with complacency and with liking.

Our domesticated animals were, like their masters, subject to many painful diseases; but the majority of them arose from the injustice and brutality of man, and not from any natural cause. Even if they were not cruelly used, if they were not decidedly the victims of tyranny, many of their diseases would necessarily arise from their servitude. It would be painful to narrate the long list of maladies which the simple operation of shoeing entailed on the horse. The daily observation and conviction of this would give him a still livelier interest in the weal and woe of his patients.

Again, he could not mingle among them without being struck with the noble qualities which many of them possess. He

regarded the horse not indeed capable of much individual attachment, but the willing servant of man—obedient to the slightest intimation of his pleasure—exerting every energy in the accomplishment of his wishes, and often dying in the attempt to serve. He regarded the dog,

> "Man's faithful companion and friend;
> The last to desert, and the first to defend."

Could he ever wilfully add to the sufferings of such beings? or would he not rejoice in protecting them from injury? A veterinary surgeon could scarcely be a cruel man, or, at least, he would be a sadly inconsistent being if he were so. Opposite and incompatible principles could not actuate the same man; therefore he claimed some fellowship for himself and his brethren with the members of such a society as that the anniversary of which they were commemorating.

"Here are four of us," said he, "uncommissioned by our brethren, yet venturing in their names and in our own, to tender our feeble aid in the accomplishment of your noble and god-like purpose. We may occasionally be able to throw some light on the nature and degree, possibly the remedy, of certain acts of cruelty. We may assist in enabling you more successfully to trace out the causes, the bearings, the ramifications of certain nuisances that you may wish to abate. We may strengthen your cause by our professional counsel or support. In many a way that cannot be here specified, we may efficiently unite with you in your labours of mercy. We come here uncommissioned—we followed the dictates of our own feelings; but we know sufficiently of the sentiments of our brethren unhesitatingly to say to you, that, in this metropolis, and in every part of the kingdom, from John o'Groats to the Land's End, we shall be proud to answer your call, whenever you think we can be serviceable to you."

Said he too much, brother veterinarians? No! There is not a man among you that will not eagerly redeem his pledge.

We acknowledge the letter of Studens. We had before heard of the abominations which it describes. We have a complete

list of the atrocities, and of the perpetrators of them. We have reason to hope such things will not take place again; or, if they should, our correspondent may be assured that we shall not shrink from our duty.

We beg to remind our readers, both students and practitioners, that the time is approaching when they—and we hope that there will be many—who mean to contend for the prizes offered by the Association, should send their Essays to the President. The subject for practitioners is, "The Diseases of the Liver of the Horse—their causes, diagnosis, and treatment;" and for students, "The Anatomy and Physiology of the Ear of the Horse." The competitors, whether practitioners or students, must be members of the Association, and the essays must be forwarded to the Secretary on or before the last day in June; each essay having a motto affixed, and accompanied by a sealed letter containing the author's name, the motto of his essay being the superscription of that letter.

Professor Coleman has also very liberally offered a prize of five pounds for the best Essay on the Anatomy, Physiology, or Diseases of the Foot of the Horse. These are to be delivered to the Secretary in the same way, in or before the third week in August. This, we believe, is open to practitioners and students.

A List of Students who have obtained their Diplomas at the Royal Veterinary College in Saint Pancras since the last Report.

April 7th, 1838.

Mr. Winslove Simmonds, Staines.
— Wm. Meginnis, Horsham.
— J. R. Hoey, Maidstone.

April 26th.

Mr. W. A. Wilson, Carlisle.
— C. L. Hodges, Collumpton.
— C. W. Harvey.
— G. Godwin, Dodington.

May 8th.

Mr. W. W. Barth, London.
— J. Rushton.

The following students of the Edinburgh Veterinary School received their diplomas on the 20th of April, after a *public* examination lasting during two days. It was conducted by Sir Geo. Ballingall; Professors Graham and Lizars, and Drs. Borthwick, Knox, Robertson, Aitken, and Handyside; Mr. Ferguson, Surgeon, and Messrs. Black and Robertson, Veterinary Surgeons of the 14th Light Dragoons and 9th Lancers. The two latter gentlemen took a very kind and active part in the examination. So nearly balanced were the merits of the candidates for the prizes, that it was only after a re-examination of two of the candidates that the judges were able to make their award.

Mr. Edward Dycer, Dublin.
— John Barker, Dumfries.
— D. Murray, Methven.
— Andrew M'Gregor, Crieff.
— Lewis Brockhurst, Hastings.
— James Robertson, London.
— James Ritchie, Perthshire.
— William Paton, Inchinnan.
— James M'Dougall, West Kilpatrick.
— John Currie, Bowland, near Galashiels.
— John Cockburn, Haddington.
— Archd. A. Wilson, Edinburgh.

The prize for the best examination was adjudged to Mr. Edward Dycer, of Dublin; and Mr. Dick, in consequence of the equality that appeared between that student and Mr. John Barker, of Dumfries, gave an additional prize to Mr. Barker. The first prize for the best anatomical preparation was also given to Mr. Dycer, and the second to Mr. David Murray, Methven, Perthshire.

ON THE INTRODUCTION OF AIR INTO THE VEINS OF LIVING ANIMALS.

[Continued from p. 252.]

We now proceed to the question of the introduction of air into the vascular system; 1st, In relation to the mechanism of that introduction when it takes place *spontaneously*, as it was somewhat erroneously stated in a former part of the essay; 2dly, In relation to the changes in the vascular system which are found after death; 3dly, With reference to the various accidents, and even loss of life, which may result from the presence of air in this system; 4thly, The probable remedial measures; and, 5thly, The inferences which may be deduced from these experiments on

the brute, as applicable to the introduction of air into the veins of the human being during certain chirurgical operations.

I. *The mechanism of the accidental introduction of air into the veins, and the pathognomonic symptoms of that introduction.*

When the inferior portion of one of the jugular veins is opened, and the incision is sufficiently large, or when these veins are laid bare, a flux and reflux of the blood is visible, isochronous, with the inspiration and expiration of the animal. If the vein is opened, a certain quantity of atmospheric air insinuates itself at the incision, and penetrates into the right cavities of the heart.

The indication, and, in some sort, the pathognomonic one, of this introduction of the air, consists in a peculiar sound, which, in the dog, resembles that made in the act of lapping, and in the horse has more of a gurgling *(glouglou)* or gargling character.

The principal cause of the introduction of air into the jugular vein thus opened is the act of inspiration, for the lapping or gurgling noise is synchronous with it—becomes accelerated with it—and grows louder and louder in proportion as the breathing is hurried or laborious. Such is the *principal* cause of the introduction of the air, but it is not the only one; in fact, the gurgling noise is sometimes louder and more precipitate than the inspiratory action, and then it becomes synchronous with the beating of the heart; but, in this case, the diastole of the right cavities (of the right ventricle more especially) concur with the dilatation of the chest, in causing the introduction of air into the circulatory system. Undoubtedly, the first of these causes is more powerful than the other, but that is no reason why we should altogether neglect the least effective cause.

This lapping or gurgling noise, at the opening into the jugular vein, is an infallible proof of the introduction of air into the circulatory system. There is, however, another physical proof of this; there is a bellows sound, with or without gurgling, which is soon heard in the region of the heart, and which takes place in the right cavities of that organ. It continues for a long time after the introduction of the air has ceased to operate; it is synchronous with the movements of the heart, and not with those of inspiration and expiration.

Many physiologists, and among them Dr. Poiscuille, have clearly demonstrated the influence of the act of inspiration on the motion of the blood in the veins in the neighbourhood of the heart, and, consequently, on the introduction of the air into these veins when they communicate with the atmosphere by means of an opening in a situation where the dilatation of the thorax exercises its peculiar influence

(force aspirante). It is our colleague, M. Amussat, who first proved in the most precise way, and almost with mathematical demonstration, that when an opening sufficiently large is made in that part of one of the jugular veins in which the flux and reflux of the blood may be perceived, air constantly enters into the sanguineous system. This is a truth, or, rather, a physiological law, and henceforth the property of science.

It is unnecessary to add, that air may enter the vascular system through an opening effected much higher up in the jugular vein, and also by any other vein in the neighbourhood of the heart, such as the subclavian and the axillary, when, from any cause, the parieties of these veins are separated or distended; but this is not the place to insist, at any length, on the conditions favourable or unfavourable to the admission of air into the veins.

II. *The state of the vascular system in the animals into whose veins air has been admitted.*

Dogs.—In fifteen dogs that were opened immediately after air had been introduced into their veins, we found a greater or less quantity of air in the right cavities of the heart, and in the pulmonary artery. The distention of the right cavities with spumous blood is sometimes so great, that they are treble their natural size. This kind of meteriozation of the right cavities is of invariable occurrence. The left cavities—one case alone being excepted—did not contain any air, and their diminished size was strangely contrasted with the enormous dilatation of the right cavities. In the excepted case, the left cavities contained a few bubbles of air.

The cranium of some of the dogs that had been placed in a vertical position being opened, some bubbles of air were found in the jugular vein, on the opposite side to that into which the incision had been made, and also in the facial and cerebral veins, and in the sinuses of the dura mater.

In four dogs, that were not opened until between the fourth and tenth day after the introduction of the air, there was only one in which we did not find some air either in the heart or the bloodvessels. In that one, opened on the fourth day, the right cavities of the heart were flaccid and collapsed*.

It may be proper to remark, that in the three other dogs were

* This experiment accords with two that were made by Nysten, who, at the end of three days, did not find any bubbles of air in the veins of the dogs into which he had injected it; but on the eighth or tenth day, this gaseous matter, so little soluble in the blood, may be found in various parts of the circulatory system.

bubbles of air either in the left cavities, or in the veins or arteries of some of the limbs, a circumstance which did not exist in the dogs opened immediately after the experiment.

We must conclude from this, that, after a certain time, the air contained in the right cavities, and the pulmonary artery, is forced into the pulmonary veins, and thence carried into the left cavities, and the arterial and venous systems generally.

Horses.—In these animals, as well as in the dog, when opened immediately after the accidental introduction of air into the jugular vein, the right cavities of the heart are always found distended with air, either free or mixed with the blood which they contain. But beside this, there is almost always found air in the left cavities, in the aorta, and always in the vessels of the brain; while among the dogs there was only one case out of fifteen in which any air was found in these parts.

What is the cause of this remarkable difference between the two animals. If we dared to hazard an explanation, we should say, that the ultimate ramifications of the pulmonary vessels, being larger in the horse than in the dog, the air mixed with the blood traverses them more readily, and that, consequently, we may expect to find it in the left cavities, and, therefore, in the aorta, at a time when it cannot have forced its way into the same parts in the dog. When, however, the dogs are not opened until some days after the introduction of the air into the jugular, it may be found in the left cavities of the heart, the aorta, and in the arteries which spring from it, and also in the veins which accompany them.

III. *Accidents resulting from, or effects of the introduction of air into the sanguineous system in animals—the causes of these accidents, and of the loss of life which may be the result.*

When we assisted at the first experiments made by M. Amussat we were pre-occupied with the idea of the sudden, instantaneous deaths which, according to certain physiologists, would be produced by the introduction of a small quantity of air into a vein near the heart, in the performance of certain surgical operations: what then was our surprise,—I had almost said our disappointment,—when we saw the greater part of the dogs that were the subjects of our experiments thus inhaling the air by long draughts, and for many successive minutes, and not only without death resulting, but without their seeming to feel any very serious inconvenience!

There are, however, certain symptoms which generally follow the introduction of atmospheric air into the veins. At the expiration of a short time—from one to ten minutes—the respiration

and the circulation become embarrassed: they are both of them accelerated—the strength of the animal diminishes, and considerable anxiety and agitation are manifested .

If, after the development of these disturbances, we stop the experiment, most of the animals presently experience very decided relief, and, by degrees, every unpleasant symptom completely passes away: or, if some are lost, it is less from the introduction of the air than from some accidental disease.

If, however, the introduction of the air is continued, the respiration becomes more and more laborious—the debility is extreme—the animals void their urine and fæces, convulsions succeed, and death is not far off.

The rapidity with which death succeeds depends on various circumstances, such as the degree of vital power, and of resistance to these attacks upon it—the size and species of the animal—his state of health prior to the experiment—the position in which he was placed—the quality of the air, the quantity of it which entered the vein, and the quickness with which the introduction of it was effected. We subjoin a few illustrations of these.

1. *Period of death after the admission of the air into the vein.*

A. Dogs placed in a horizontal position.

a. Not weakened before the experiment.

In five of these animals three did not die in consequence of the admission of air into the veins. One died on the fifth day of accidental pleuro-pneumonia. The second dog lived four days after the experiment. The third was destroyed ten minutes afterwards; but so little affected by the experiment did he seem to be, that he probably would have lived many days, or, perhaps, altogether recovered. One of the other two died in a quarter of an hour, seemingly from the closing of the orifice of the vein through which the air had been introduced. The last of the five lived half an hour after the experiment.

b. Dogs enfeebled or ill before the experiment.

Five dogs were subjected to this experiment. Three of them died immediately on the introduction of the air. Of the other two, one died in four and a half minutes, and the other in twenty-five minutes.

These and some other experiments seem to prove that, all other things being the same, death sooner occurs in those that have been previously enfeebled than in others that retain their full strength.

B. Dogs placed in a vertical position.

a. Dogs not weakened before the experiment.

Of four dogs thus placed one only lived four days, and was

then destroyed. Of the others, one died in three minutes, another in sixteen, and the third in twenty-five minutes.

b. Dogs weakened before the experiment.

One dog only was experimented on here. He had been much debilitated by a previous bleeding. He died at the expiration of six minutes. Death seems to be produced sooner in an animal that is placed in a vertical than in a horizontal position. In the first position, probably, the arrival of the air into the cerebral venous system is favoured: and here also death is hastened by the previous debilitated state of the animal.

[To be continued.]

Veterinary Jurisprudence.

A Blow—an old Sprain—or a Splent? Hole *v.* Mountstephen.

[We insert this trial, because several old acquaintances of our own and of many of our readers are introduced—because the evidence which they gave was most straightforward and consistent, in despite of an exceedingly severe cross-examination of one of them—and because it affords another singular proof of the glorious uncertainty of the law, in cases of this description at least. Had we been in the jury-box, our verdict would have been a very different one. Except there was something exceedingly rascally in the transaction, we always used to say to those who consulted us on these matters, "Put up with the first loss, if you can bring your minds to do it."]

John Jacobs.—I am a carrier; I know the plaintiff; I saw him on horseback, two miles from Exeter, at eight on the morning of the 28th of July; he passed me, going at the rate of five miles an hour. I saw him at Winkleigh, five hours afterwards, twenty miles from Exeter. I saw his horse in the stable there, and cleaned it down. In rubbing it down, I saw a knob just under the knee in the off fore leg on the inside. It made the leg look crooked. I examined it, and it appeared to me as if it had been an old grievance; as if the horse had been lame, laid by, and then put to work again. I have been accustomed to horses ever since I have been able to walk about. It appeared as if there had been a splint, and they had tried to get it back; there was a dry "scud" on it, as if it had been an old wound healed up. The swelling extended from the back of the knee all down the tendon to the fetlock joint. On the third of August I took it back; it

was then a little lame. I delivered it to the hostler who put the horse in the stable and tied it up. I delivered a letter for Mr. Mountstephen to his wife. *Cross-examined.*—I am a pretty good hand at horses. I considered that at the back a splint, but I am no Vet'nary; beside the splint, there was a great deal of swelling all down the leg. He met with no accident on the road back. When I gave him up to the hostler, I am quite sure that he was not bleeding at the fetlock. I did not observe that the skin had been cut under the fetlock joint.

Re-examined.—I rode the horse most part of the way, at about three miles and three quarters an hour, back. It appeared to me that they had been trying to bring the splint down; they sometimes do it by beating it with a small hammer when it first grows; or by blistering, which leaves a scab for a short time.

Philip Fry.—I am a veterinary surgeon, living at Torrington, where I have practised these two years. I studied at the Veterinary College. I had been an amateur some years, and used to look after my own and my neighbours' horses. I was called in on the 31st of July to see the horse. I examined the off-fore leg, and observed that there was a thickening of the skin from the knee to the fetlock joint; there was also a cicatrix on the near side of the leg—the appearance of an old wound healed over without any hair. I observed an old speedy-cut inside the knee—the sheath of the tendons was thickened: various causes may produce this—it would impede the action of the horse. On the Thursday following I was again called in, when the horse was delivered to Jacobs. The appearances were the same, but it was a little more swollen. It went away slightly lame—not dead lame—on the off-fore-leg. If the horse had met with a wound or a bruise on the 29th of July, it could not have produced this appearance—the swelling had the appearance of a strain previous to the 29th of July.

Cross-examined.—I used to act as an amateur veterinary at Witheridge: afterwards I was at the Royal Veterinary College, and before that with a person at Southmolton. I was a student, and when I got my diploma I commenced practice. If the horse was sound on the 28th, these appearances could not have been there on the 30th: there could not have been that deposit—the morbid thickening. I observed no flesh wound above the fetlock joint—there was an abrasion of the skin. The horse might be made useful; but I do not believe that it could ever be made sound. I should say the outside worth of the horse would be £10 when brought round.

Re-examined.—Supposing there had been an old inflammation in that leg, it would be more like to fail there again: it might be

brought round by rest and good treatment; but I do not think it would be a safe horse to ride. *James Jeffrey.*—I was plaintiff's servant on the 29th of July. I dressed the horse about six o'clock, and observed a scab inside the off leg, just below the knee: the leg was swollen at the same place home to the fetlock. I took him out of the stable to dress him the next morning, and it was lame. It was not worked from the time that it came to the 3d of August. *Richard Hole.*—I am a surgeon residing at Torrington. I am father of the plaintiff. I saw the horse brought home on the 29th—examined it, and considered it an old injury. This closed plaintiff's case.

The following witnesses were called for the defendant:—*John Fairweather Bickford,* veterinary surgeon.—I examined the horse when Oxenham was at Kingsbridge. Shillibeer had then had it upwards of two years. I found it perfectly sound in every respect. I observed a splint on the off fore leg, but of no detriment. It was my opinion that it was perfectly sound, wind and limb. I examined it at Mr. Rookes's about six weeks ago: it was perfectly sound, and the legs very fine. *Thomas Oxenham.*—I recommended Shillibeer's horse to my brother, and he gave £16 for it. On the 24th he rode it up to Exeter, thirty-six miles. I had offered £15 for it, and would not have offered that money for it if I had not known it to have been sound. I rode it sixteen miles the week before to try it. I saw the horse at the Bazaar soon after it was returned, and also since Mr. Rookes bought it: it was as sound as a rock.

— *Shillibeer.*—My father died six weeks ago—he had had the bay cob two or three years. We used it in the course of the business. It was perfectly sound at the time it was sold—I never knew it to have any lameness. *Thomas Hex.*—I am landlord of the White Hart Inn, St. Thomas. On the 24th of July, Oxenham rode into my yard, and told me it was a horse he had bought at Kingsbridge. I examined the horse—I have had a great many in my day—I looked at the legs, and saw a splint in the off leg, but the sinews and tendons were perfectly sound. I offered Oxenham £18 for it—he asked me £25. I saw it afterwards at Rogers' Bazaar, about three weeks before it was sold. I wanted it, and would have given £20 for it then. I examined the horse's legs particularly, and found them perfectly sound—as sound as a foal, except the splint.

John Martin.—I was hostler to defendant in the month of July. I remember plaintiff coming to know if there was not a horse for sale? I said "Yes;" he asked to see it, and examined it. Mr. Hole saw the splint, and said he did not mind that: he rode the horse away, and came back in about an hour. When

he returned, I asked him how he liked it?—he said he liked it very well, and it was a nice little horse. He asked the price, and Mr. Mountstephen said £25. Plaintiff said "Pooh, pooh, £15 is enough for it." Master said, if he wanted a good article he could not expect it at a low price. He came again on Friday, and had the horse out—he again examined it; they did not agree about the price. He came two or three times in the course of the day, and it was brought out; he wanted to ride it again; but master said "once was sufficient, and if he liked it he could take it." Master and he went down to the house, and consulted about it, and they struck the bargain. The horse was taken up to the White Horse. I had had the grooming of the horse, and had observed no scars nor scabs on the legs. When it was brought back I observed a running wound and a swelling on the off fore leg: it appeared to be a cut, and there was matter in it—it was half way down between the knee and the fetlock. Mr. Rogers was present when it was brought back.

John Tolcher.—I belong to the Half Moon stables. I have had to do with horses all my life. I saw the horse when Mr. Hole mounted; I ran my hand down the leg; there was nothing the matter but a splint. I pointed it out to Mr. Hole, he said that he had seen that, but did not care about it. *Cross-examined.*—I heard that this horse was got by *Gainsborough,* and knowing that old *Gainsborough* had had many splints about his legs, that made me interested to look at it. *Thomas Beavis.*—I keep the White Horse Inn; I have been a coachman all my life—fifteen years a mail-coachman. I saw the horse with Oxenham on his back a few days before it was sold; it was a horse that I particularly fancied. Mr. Hole came to me and asked me if I knew a horse that would suit him—I told him of this horse. I saw neither wound, nor scab, nor running sore; there was no blemish or sore, but there was a little bit of a splint. If the hair had been off when I first examined his leg I must have felt it. *Elias Cox.*—I am hostler at the White Horse. Mr. Hole brought his horse there for a night. I groomed it, and examined his legs, and there was not the least blemish in them. I got the horse ready for the gentleman the next morning. He examined the horse all over, and told me that "he did not think he could suit himself better, go wherever he might for a horse." I saw him go away; there was not the least lameness about him. I saw the horse again in Mr. Rogers's yard. There was a bit of scud between the knee and the fetlock, and a little humour running out. There was nothing of the kind when he started.

Mr. Josias Rogers.—I am a veterinary surgeon; this horse was brought to my stable on the 3d of August. I looked at it on

the 4th ; it had received a blow, and there were several abrasions of the skin about midway between the knee and the fetlock joint of the off fore leg. There was a swelling about it, and a little discharge, such as we generally see from blows of that kind. I examined it ; it appeared to be of a temporary kind—if it had been an old inflammation revived, I should have observed it immediately. It was cured in about a fortnight. The swelling went down of its own accord. I observed no other scar or old wound about the leg.

The Lord Chief Justice.—When you saw there was something the matter with the horse, did you examine it in all other respects ? —I did my Lord. *Examined.*—My son examined it, and Mr. Drake also examined it. It remained with me from August the 3d or 4th till the 15th of December, when I wanted to get paid for its keep. It was sold by Mr. Hussey, the auctioneer, for £17..6s..6d. What I saw could have arisen in the journey from Exeter to Torrington. There was nothing that led me to believe that this was a long-standing defect. In my judgment the horse was perfectly sound with the exception of this disease.

Cross-examined.—When he came to me he was a little stiff—you may say lame. When he came first, he had a serous fluid running from a wound in the leg—not what is termed matter, or pus, but a thin glairy fluid. Blood would first be discharged from such a wound as the horse had, and after the blood this thin fluid, and, after that, a cicatrix or scab would be formed. This, in such a wound, would probably take place within about eight-and-forty hours ; but that would depend upon the extent of the injury. The whole of the ligaments attached to the knee, and a small portion of the back part of the knee, were swollen in consequence of being near the neighbourhood of the wound. The swelling approached the fetlock joint, but did not affect it. When a horse receives a blow on the inside of the leg, it is a very common occurrence for the swelling to extend down to the fetlock joint, and likewise to the back of the leg. This swelling is the result of inflammation of the part. A strain on the muscles would produce inflammation, and is more or less violent, according to the nature of the injury. We can distinguish between inflammation arising from the one cause or the other ; the one is more superficial than the other, and you can feel it with the finger : the horse also puts his heel differently to the ground, and goes with greater ease in the one case than in the other. The tendon can be inflamed in consequence of the wound, but not severely. If there was a considerable wound on the lower part of the leg, it would not produce inflammation in the tendon, except from sympathy. I am speaking of inflammation extending to the tendons when a

blow is given on the edge of the bone. It is the cellular membrane that is affected, but not the tendon. The action of the leg would certainly be impeded—there would be stiffness in the action; but I ought to know the difference between a stiffness arising from an old strain, and one from a wound. He might have been taken from his stables, a sound horse, very shortly after he came, which could not have been the case if it had been an old strain. The swelling was the very opposite, in my judgment, to that which would have arisen from a strain.

Mr. James J. Rogers, son of the last witness, was examined at some length to the same fact: his was a full confirmation of his father's evidence. *Mr. Edwin Drake,* veterinary surgeon, saw the horse on the 26th of October, before it was sold. He examined the legs and back tendons. There was no swelling, no remains of an old strain, nothing but a slight splint on the off fore leg, otherwise not a blemish on the legs; indeed his legs were as clean as a colt's. *W. Rookes.*—I am a horse dealer, and have been so for thirty years. I bought the horse. I examined it all over with a view to buy it about a month before it was sold. I examined his fore legs: it was the cleanest legged horse I ever felt in my life. There was a little bit of hair gone, but so small I could hardly see it. If it had been a hundred guinea horse I should not have objected to him for the splint. If there had been any long standing disease I should have discovered it. I was asked to examine the horse, because I was supposed to know something about horses. I heard that there was a dispute about him. I afterwards bought him for his action, which was undeniable. My son has him now at Plymouth. I should like to get thirty guineas or twenty-five; but I would not sell him to you for £20. I have an establishment at Plymouth, which my son looks after.

The Jury found for the plaintiff, damages £20.

Lame or not Lame?—The Regulations of Horse Repositories.

Lucas *v.* Blundell.

[Here we have old friends, and an instructive case; but the verdict was on the right side.]

The plaintiff was Mr. Robert Lucas, who keeps a repository in this town for the sale of horses and carriages by commission; and the defendant is the present high sheriff for this county. The action was brought to recover the sum of £47..10s. for a mare sold by the plaintiff to the defendant, and for which the

defendant refused to pay, pleading that he had been induced to purchase the mare by the misrepresentations of a person named Farrall, to whom the mare belonged.

Mr. Creswell said the question for the jury to try was, whether Mr. Blundell was induced to make the purchase by fraud, or whether the sale was an honest one. It would appear that, on the 22d of August, Mr. Blundell went to Lucas's repository, and bought a mare for £47..10s. At the plaintiff's repository there was a rule, which had been a long time adopted—that all horses sold there with a warranty must be returned, if at all, by twelve o'clock the next day, with a certificate of a veterinary surgeon, stating the nature of the lameness of which complaint was made. It had been found necessary by the plaintiff to establish that mode of doing business, as he sold horses by commission, receiving a per centage for guaranteeing the money, which, the following day, at twelve o'clock, he paid over to the owners of the property sold. All persons knew that rule, for it was almost as well known as Lord-street in Liverpool. No man visiting the plaintiff's premises could fail to see the rules, which were painted on a board in the yard, and their legality and validity for his protection had been decided in the court of Queen's Bench, after solemn argument. Mr. Blundell, however, had not returned the mare within the limited period; and he knew full well, for he had been there before, that he could not bring his action for breach of warranty;—in fact, he had the staff in his own hands, for he had not paid the money. He, therefore, returned the mare, with a veterinary surgeon's certificate, and refused to pay, and to recover the amount Mr. Lucas was obliged to bring this present action. Mr. Blundell did not come within the limited time, with a surgeon's certificate, and say the mare was unsound; but he put an ingenious plea on the record, to the effect that Mr. Lucas was employed by one Robert Farrall to sell the mare; and that Mr. Farrall by fraud had induced the defendant to buy her, whereon issued was joined. But it was an odd thing if Mr. Blundell bought a horse on what he had been told by Farrell: he (Mr. C.) should have supposed that he would have taken Lucas's warranty rather than any thing that he had been told by Farrall; or have taken his own judgment. But no; he undertook to prove that he bought the mare on the strength of Farrall's representations, and that Farrall was, in fact, a roguish horse-dealer. Now they (the Jury) should hear the circumstances, and be able to judge whether Mr. Blundell relied on Farrall's statement or Lucas's warranty, aided by his own knowledge of horse flesh; for Mr. Blundell was a sportsman, and was accustomed to rely a good

deal on his own judgment. As far as the sale went, it was one of the fairest transactions. Mr. Blundell came to the plaintiff's stables, the mare was brought out on the pavement and trotted, she was also gallopped on some bark land for the purpose, and then he took her away for examination by a veterinary surgeon elsewhere. Some persons would not have allowed this, but Mr. Lucas did; and he must have had great confidence in the soundness of the beast or he would not have consented,—for a veterinary surgeon so employed might be considered as an adversary, as he, of course, tried to pick out faults, as his learned friend (Mr. Sergeant Atcherley) who was watching that case, would try to find fault with it. The horse was tried by a butcher, whom Mr. Blundell had known as a good judge of horse flesh, and he approved of her. When she came back from the veterinary surgeon's, Mr. Lucas found that her shoes had been off. That certainly was a great test to submit her to; but more, the mare's feet had been pared down so low that one of them had been cut to the quick. "Yes," said Mr. Blundell, "I had her shoes off certainly,"—perhaps to look for corns; so that if there had been one it would have been discovered. "Ay," said Mr. Lucas, "they have been pared until they bleed, and they have been cauterized to stop the blood;" and he took his knife from his pocket, cut off a little of the burnt horn, and satisfied himself that it was so. But after all this examination the mare was approved, purchased, and taken away; and the next day she was brought back, and it was stated that she was lame, and she certainly was. But Mr. Lucas said he could not take her in, for she was sound enough when sold, and had not been brought back within the time limited; and she was sent to livery. She remained some time at Walton's livery stables; and at last Mr. Blundell and Mr. Lucas considered that, though the matter was to be brought to trial, it would be very expensive to keep her there, and they agreed to sell her; and she was sold in October without warranty, but with the reputation of being a mare about which there was a dispute, for the sum of thirty guineas, while, they would recollect, Mr. Blundell had only bought her for £47..10s. with a warranty. Well; the gentleman who bought her rode her to his house in Staffordshire, a distance of between fifty and sixty miles, in one day, and found her perfectly sound. After riding her he put her into harness, and drove her back to Liverpool, a distance of fifty-four miles; and she was sound still, and so she continued; and a few weeks ago, being too light for the work for which she was wanted, she was exchanged for another, and in the exchange was valued at forty guineas. That was pretty good proof that she was sound when she was

sold, and afterwards; but she was lame when she was returned, and perhaps she had received a kick from a hostler, or a knock on her leg against a pail: of that he knew nothing; but certainly in a few days her lameness subsided, and she was well afterwards. He (Mr. C.) should call evidence to prove those facts; and it would be for them to say whether the plaintiff was not entitled to a verdict.

Witnesses were then called to establish the case as stated by counsel, and

Mr. Sergeant Atcherley addressed the Jury for the the defendant, commenting with some severity on the condition of sale adopted by Mr. Lucas, which almost precluded the possibility of a horse being examined and returned in the prescribed period. He then stated the nature of the evidence he was about to adduce, by which he should shew that the mare had been known as lame when in the possession of a gentleman in Ireland; and that Farrall knew of her lameness and unsoundness at the time she was sold to Mr. Blundell.

To prove this he called a stud-groom, who had her under his care in Ireland, and Mr. Walton, livery-stable keeper of this town, who examined her before the sale, and told Farrall of her unsoundness; but he also stated that Mr. Blundell brought her to him before he made the purchase, and he told him also that she was lame. Other witnesses proved her lameness, and one, a servant to the defendant, stated that she was not returned before twelve o'clock on the following day on account of the wetness of the morning.

Mr. Creswell replied, and

His Lordship summed up the evidence, in the course of which he intimated that the defendant had not made out his plea, that he had been induced to purchase by Farrall's fraud and misrepresentation.

The Jury consulted for a short time, and then returned a verdict for the plaintiff—Damages, £47..10s.

Miscellanea.

The Great Horse Fair of St. Luc, in Normandy.

The rapid progress of improvement in the amelioration of the breed of horses in the valley of Auge was evident at the last October fair at Saint Luc. Sucking colts, principally from the valley, are annually brought hither, and sold to the rearers of the plain of Caen; and in proper time they come thence into the general market. On the quality of the stock at these fairs

depends, in a great measure, the value of the agricultural and commercial horse, throughout France.

There was a considerable diminution at the last fair in the gross number of colts exhibited; but that had, evidently, reference to the inferior class alone—the more valuable and useful ones were increased, although not equal to the diminution of the others. This falling off in gross numbers was an advantage rather than an evil, and is certainly no proof of discouragement or distress on the part of the breeders.

There could be no doubt that the quantity of colts that bid fair to become good and useful was increased: there was an evident improvement in their general character, compared with the young stock of any preceding year; and it could not be disputed, that that amelioration extended to all the points which the breeder and grazier deemed of importance.

There was an evident change in the proceedings of the buyers. They eagerly sought, and paid a higher price for those of pure blood than for the indigenous breed once so valued, or for the half-bred. The fillies of the improved blood were particularly sought after; and their points in other respects being equal, they fetched a hundred francs per head more than the colts of the usual breed. This was the first time that so great prices had been obtained.

In the afternoon of the fair, there was a distribution of prizes for the best breeding mares. This is a most excellent proceeding, and cannot fail of accelerating the march of improvement which has so evidently commenced.

Another lesson for our breeders and for the Government!

Horse Races in Siberia.

A letter from Ouralsk gives an account of the races which were held there in October last. The course was eighteen wersts—about twelve English miles—a cruel distance, but worthy of that country. Every horse was to be equipped in the Cossack fashion, and ridden by his owner, without reference to weight.

In the first race, thirteen riders darted into the arena, uttering the most savage cries. They were Cossacks from the Oural and the Kirghises. The celebrated black horse of the Cossack Czugramica, who carried all the prizes in 1836, ran the eighteen wersts in twenty-seven minutes, fifteen seconds. He took the lead from the beginning, and none of the others had any chance. The prize was 5000 roubles in paper, equal to as many francs.

The second prize was disputed by eight Cossacks of the Ouralsk, and won by the Sultan Kadanurmanom, whose horse ran the distance in thirty-two minutes and forty-five seconds. The

prize was 3000 roubles. A great many Russian seigneurs and gentlemen came from great distances to witness the speed and stoutness of the horses of the *steppes* of Oural, and which in this instance proved themselves superior to the Persian and Arab horses. General Perowsky and Prince Kustusow wished to buy the horse which won the first prize, and offered 20,000 rubles to its owner; but the Cossack refused, swearing that death alone should separate him from his faithful companion and friend.

Superstition.

The *Journal de la Meuse* of the 21st of February relates that a few days before, the crier of the town of Loupey le Petit, with permission of the Mayor, made the following proclamation:—"The inhabitants are informed, that a woman having relicts of of St. Herbert and others, which are good against hydrophobia and other complaints, will come to their houses to-morrow, in order to mark their dogs, cats, sheep, and other animals, demanding only one soû for each. A mass will be celebrated in honour of the great Saint, in order to prevail upon him to preserve all such animals from the said complaints."

In fact, the following day the woman appeared, accompanied by a shepherd, and marked a great many animals, thereby procuring a considerable sum. The Mayor himself was the first to set this excellent example. The rector, unwilling to become an actor in such foolery, refused to perform the mass.

The Murrain in Switzerland, by Dr. Wincler.

In 1682, on the borders of Italy, a murrain infected the cattle. It spread into Switzerland, the territories of Wurtemberg, and other provinces, and was exceedingly destructive.

The contagion seemed to propagate itself in the form of a blue mist, which fell upon those pastures where the cattle grazed, insomuch that whole herds returned sick home, being very dull, and forbearing their food. Most of them would die in twenty-four hours.

Upon dissection, there were discovered large and corrupted spleen, sphacelous corroded tongues, and some had malignant anginæ. Such persons as unwarily managed their cattle, without regarding their own health, were themselves infected, and died like their beasts. This contagion might probably proceed from

some noxious exhalations emitted from the earth in three distinct earthquakes that had been felt in the space of one year.

The method of cure was this :—Upon the least suspicion of contagion, the tongue of the animal was carefully examined. If they found any aphthæ or blisters, of whatever colour they were, they rubbed and scratched the tongue until it bled ; then they wiped away the blood and corruption with new unwashed linen. This done, a lotion of salt and good vinegar was used for the tongue. The antidote or medicine for the diseased cattle was equal parts of soot, gunpowder, brimstone, and salt, a large spoonful being a dose, and that washed down with common water.

Dr. Slare was assured by two travellers, that this contagion reached the borders of Poland, having passed quite through Germany—that it was observed to advance daily, spreading near two German miles in twenty-four hours—that it, at the same time, infected places at great distances, and that cattle secured at rack and manger were equally infected with those in the field.

The murrain raged dreadfully in England at this time.

The Universal Magazine, 1747.

Exophthalmia and Cataract in Fish.

In the garden of the Alfort school is a reservoir and a pond, into which, about two years ago, some Chinese golden fish were placed. Those in the pond seemed to prosper well, and were free from disease; but those in the reservoir, the bottom of which is of a dark colour, and into which the rays of the sun never penetrated, were attacked in the first year with a disease which destroyed five or six of them, resembling, at the same time, both hydrophthalmia and exophthalmia (dropsy and protrusion of the eye), but approaching most to the last, since the eyes were almost entirely pushed from their sockets. During the second year, eight or ten were affected in the same manner, and during the months of January, February, and March, of the present year (1816), more than a dozen died.

Another disease also began to shew itself in this year, namely, cataract, sometimes in one eye, and at other times in both.

When they were attacked with exophthalmia, the eyes assumed the appearance of two straight horns, rounded at their extremities, protruding from the cavity of the orbit. In some fish they were both equally prominent, in others one projected much more than the other. There were some in which the eye did not appear to be otherwise diseased ; but in most the cornea was covered with red spots of a greater or less size. In some the

pupil was dilated and the eye enlarged—in others it was diminished in size, and the pupil contracted.

The fish thus diseased usually swam turned on one side, and that generally answering to the eye that was most affected. When they changed their position, they made several *pirouettes* with their heads depressed, until, as it would appear, they had obtained the position least painful to them. In this way we were enabled to distinguish at a distance the fish that were diseased. This disease usually continued during several months before it destroyed the sufferer, but in course of time he invariably perished. The body seemed to have acquired some degree of hardness, and it was a considerable time before decomposition commenced; but perhaps this was principally to be accounted for by the coldness of the season, when the disease was most prevalent.

It was at the end of the third year that cataract began to appear. It usually attacked both eyes at the same time, and then it was most dangerous. The mortality now sadly increased. The crystalline lens acquired the hardness of a pebble.

The cause of these diseases seemed to be the obscure situation of the reservoir; for the fish in the basin in the middle of the garden were unaffected, and those that were attacked in the reservoir, being placed in a glass in a light situation, partially recovered their sight. There were two, especially, that seemed to be dying when they were taken from the reservoir, and in one of whom, after a while, no disease could be perceived. The other continued blind, but he was lively, and swam about as well as he could on one side.

I took one of the fish whose eyes were very prominent, and pierced the cornea with a needle; scarcely any fluid escaped:—but on the same day the eye became exceedingly red, as would be the case with any other animal on whom a similar operation had been performed, and the iris wounded. A few days afterwards the eye was evidently diminished in size; but the fish plainly continued to suffer great pain; and I think the operation was injurious rather than beneficial.

The two fish to whom I principally allude often seemed to disagree, and fought with each other, although they were very unequal in size. They appeared to be in almost a comatose state when the weather suddenly changed, and particularly when the south wind blew with violence. They both died suddenly, after having been exposed in their glass several days to the light and heat of the sun.

These maladies causing considerable loss among our golden fish, either absolutely destroying them, or rendering them evi-

dently dull and uncomfortable, we removed all our finny patients to a lighter situation; and, simple as this means of cure seemed to be, it was effectual, particularly with regard to those that were affected with exophthalmia. We thought that this change might also arrest the progress of cataract, or preserve from the attack of it; and we were not deceived in our expectation, for there is not, at the present moment, scarcely an instance of exophthalmia or cataract.

Gohier's Memoirs and Observations, vol. ii, p. 196.

Poisoning by Verdigris.

One of the Limoge journals states, that twelve horses that drank from the fountain of St. Pierre on the night of the 28th of August 1836, died in the course of that night, or on the following day. The water had been empoisoned with verdigris by means of some copper vessels that had been washed in it, and forgotten, and left in it, until they had become oxydized.

Journ. des Haras.

The Extraordinary Speed and Endurance of the Camel.

In the northern districts of Africa the settlements of the inhabitants are separated by immense solitudes; but a wise and benevolent Providence has placed there not only the Arab horse, which traverses with such velocity the torrid sands, but the camel, and especially the breed of it which is recognized by the name of Hersis, and which, perhaps, exclusively merits the name of "the ship of the desert." Nothing can equal the rapidity of his march, and one scarcely dares to repeat the stories which are told. The following relations, however, may be depended upon:—A hersi travelled from Senegal to Mogador in seven days. He traversed fourteen degrees of latitude, and, allowing for the *détours* of the way, the distance could not have been less than 525 leagues (a French league is 2¼ miles), or 75 leagues a day. A moor, living on the borders of the desert, mounted his hersi one day and rode to Algiers, a distance of seventy leagues, and returned on the same night with some oranges, which one of his wives longed for.

Moniteur Industriel.

TO CORRESPONDENTS.

We cordially thank Mr. W— for his communication; but as the matter related not to the students generally of that school, but to the practical pupils of the last session, we thought it not advisable to give it publicity. Another and a better time will come.

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ANIMAL PATHOLOGY.

By Mr. YOUATT.

LECTURE XX.

The Improbability of spontaneous Rabies.—The Virus must be received on some abraded or wounded Surface.—The slightest Abrasion sufficient.—Mucous Surfaces.—The Coach Dog and the Horse.—How is Rabies propagated?—by Contagion alone.—Different Susceptibilities in different Animals.—The Cause of this.—Clothing.—Altered State of the Poison.—This an important Question.—Different Persons and Animals, differently predisposed.—The Virus resides in the Saliva.—The Time of its Incubation in the Human Being, Dog, Horse, Cattle, Sheep.—The Cause of the Irregularity of its Appearance.—The Power of Imagination.

I AM reminded by a kind friend, that I might have made a much stronger statement than I ventured to do in my last Lecture of the impossibility of producing rabies in the dog by any of the commonly supposed causes of it. The experiments of Bourgelat had been previously again and again tried in Italy by Redi, towards the close of the seventeenth century, and did not in a single instance succeed*. They were repeated with every possible variation by himself at Alfort. In the month of August he took three dogs, one of which was fed on salted meat, but without a drop of any kind of fluid. Another had water set before him, but no solid food; and the third had nothing either to eat or to drink. They died, but without the slightest symptom of rabies. The experiment was again performed in the month of January. The dogs died much sooner, probably from the diminution of temperature, but there was no rabies†. My friend adds, that there are several accounts of

* Osservazioni interno agli animali viventi, &c. In Firenze, 1684, p. 94.
† Instructions Vétérinaires, tom. i, p. 294.

dogs being starved to death in long voyages, and in cases of shipwreck, but not a single instance has been recorded of madness being thus produced.

The rabid virus, in order to produce its fatal effects, must be received on some abraded, or wounded, or mucous surface. On the sound integument it is harmless. There are a thousand proofs of this. Almost every author acknowledges it, and many a time have my hands been covered with the poison. I always used to examine them very carefully before I commenced the dissection of any animal on which suspicion had rested, and to cover every unsound part with adhesive plaister. Another examination, fully as careful, followed the dissection. The lunar caustic was freely applied to every place that had been accidentally scratched, and to every spot of the slightest doubtful character that had been previously overlooked.

The slightest Abrasion sufficient.—The disease may be produced through the medium of the smallest abrasion. The case of Mrs. Duff is well known. She had a French poodle of which she was very fond, and which she was in the habit of allowing to lick her face. He became rabid; but the disease was not recognized in its early stage. There was a small pimple on her chin of which she had rubbed off the head. The dog was permitted to indulge in its usual caresses. The saliva was brought in contact with the exposed surface of the pimple, and she became hydrophobous and died*. As to the danger which would attend the application of the poison to abraded or wounded surfaces, however small, there can be no doubt.

Mucous Surfaces.—The case is not so plain with regard to mucous surfaces. A dog belonging to a Venetian nobleman became rabid, and was ordered to be destroyed. The master was much attached to his quadruped friend, and kissed him ere he parted from him. He paid the penalty of this imprudent fondness with his life†. A physician, as stated in the last Lecture, dying hydrophobous, imprinted a parting kiss on the lips of his child. The infant soon followed its parent. A man at Lyons was bitten by a rabid dog. He continued to cohabit with his wife until symptoms of this fearful malady began to appear. He died, and shortly afterwards she too became hydrophobous, and perished‡. On the other hand, a maiden would not be parted from her lover, but lavished on him her caresses. He died, but she was not harmed. We dare not, then, to affirm that the virus is always dangerous or fatal, when deposited on a mu-

* Lancet, 1829-30, i, p. 619

† Cardanus Consen. Medic. Tract. 5.

‡ Instructions, Vet. i, p. 295.

cous surface. Bread smeared with the saliva of a rabid dog has been eaten by another dog without the slightest bad consequence. The mucous surfaces are far more susceptible of *abrasion* than the cuticular ones, and in these fatal cases abrasion might possibly have existed. You will be very cautious, then, in the opinion which you give, and very decisive in your treatment whenever there is a probability of the virus having come in contact with a mucous surface. It was on this principle that it was thought necessary to apply the caustic so freely to the lips of the lady, and the mouth of the young nobleman, as related in a former Lecture.

The Coach Dog and the Horse.—We have frequent illustration of the danger of the poison being imbibed through the medium of these surfaces. There is a strong attachment between the Danish dog and the carriage horse. It may be pleasing to many persons to witness the interchange of caresses between them : but the veterinary surgeon likes it not, and is often tempted to wish that this intercourse between the two quadrupeds were less encouraged. Not even under the strongest excitement of rabies will this dog be induced to bite his companion and friend ; yet it is rare that the coach dog dies rabid without the horse speedily following him. This fact deserves to be more extensively known. It is noble to see this beautifully spotted animal bounding along by the side of his companion and friend, but there is danger about it. I have known more than a dozen instances in which the friends have been too soon united in death.

Rabies, how propagated?—Then we are advanced thus far. Rabies, whatever might have been its origin, is propagated by inoculation alone. I once more ask for the record of a single case of *spontaneous* rabies ; the symptoms, and the power of propagating the disease, being clearly stated and proved.

The virus of every rabid animal is capable of communicating the disease. It is chiefly propagated by the dog, because with him the teeth are the natural weapons of offence ; but there are instances of its having been produced by the saliva of the wolf, the fox, the cat, the badger, the human being, the swine, the horse, and the ox*. It follows this, as yet without a known ex-

* Dr. Bardsley, in the very excellent article "Hydrophobia" in the Cyclopædia of Practical Medicine, makes the following remarks : "Later investigations seem to shew that the herbivorous animals do not easily communicate the disease ; but the whole evidence adduced is jejeune and meagre, and the paucity of cases of communication may result from the pacific disposition of such animals. It is the nature of the carnivora to be easily roused to rage, combat, and violence. The Author of Nature has made them so, because by combat and violence he has destined them to support their existence ; but the pacific races that crop the flowery mead, and participate

ception, universal law, that where there is a susceptibility of—a tendency to take on—a certain contagious disease, there is a power of communicating it. This is a perfect truism, a self-evident and undeniable proposition. I do again ask for a single case in which the susceptibility of receiving is given, and the power of communication denied. I see that in all these animals the malady assumes the same character—it runs the same course—it has the same inevitable termination; and it is ridiculous to suppose that the power of communicating it should be wanting to complete and perfect the analogy.

Different Susceptibility in different Animals.—The virus does not appear to have the same effect on every animal. Of four dogs bitten by one that is rabid, three would display every symptom of the disease. Of four human beings, perhaps not more than one would become rabid: John Hunter said, not more than one in twenty. This, however, was carrying the matter too far. The majority of horses inoculated with the rabid virus, perish. Cattle appear to have a greater chance of escape, and a still fewer number of sheep take on the disease. The hog stands next to the dog in the predisposition to become affected. Trolliet relates, in his valuable work on rabies, that twenty-three persons were bitten by a rabid wolf, no fewer than fourteen of whom died, in defiance of all preventive means.

This immunity depends on various circumstances. In cattle the skin is looser than in either the dog or the horse, and less easily penetrated. As it respects the sheep, the tooth has probably been cleaned in its passage through the wool. Circumstances of a similar nature may have much influence in the human being.

Causes of the apparent Immunity—In the too numerous cases of hydrophobia which medical journals and other publications contain, it is singular to observe that, with very few exceptions, almost any kind of clothing over the bitten part has prevented the development of the disease. In the long list just quoted from Trolliet, the far greater part of those who perished were bitten in the hand or the face.

without assistance in the bounteous repast with which they are everywhere presented, have neither habits nor motives which febrile or nervous irritation might prompt into violent action: and into them the same great Author has instilled fear only as a motive of flight, seldom as a motive of aggression or resistance. Hence probably the extreme paucity of their bites altogether, and the assertion that they never reproduce the disease; an assertion which we look upon as calculated to diminish circumspection, and to inspire more confidence than is warranted by the evidence upon which it is founded: we wish that in hydrophobia no other conclusions had been originally drawn from such slender premises, and afterwards expanded into general laws.

Dr. Parry relates an interesting circumstance applicable to our present subject. Dr. Ingenhousz was experimenting on the deadly power of the Ticunas poison. He had just envenomed the point of a knife, when it fell from his hand, and, piercing the shoe and stocking, wounded his foot. He threw himself back in his chair, and calmly said, "In five minutes I shall be a dead man." More than five minutes having elapsed, without his feeling any thing but the pain that would result from a similar wound in any other way inflicted, he carefully washed the part; and he suffered no after inconvenience from it. The poison, like the vitiated saliva, was in a fluid form, and it had been entirely wiped from the point of the knife in its passage through the shoe and stocking.

Altered State of the Poison.—It is in the early and ferocious stages of the disease that the bite is most dangerous; but with the declining strength of the animal the virulence of the poison seems materially to diminish.

An insatiable thirst accompanies the latter stages of rabies. We can readily suppose that the virus, largely diluted by the water which the animal is almost incessantly drinking, may be rendered comparatively innocuous.

I have already observed that it is sometimes exceedingly difficult to inoculate the dog or any other animal with the rabid virus. This seems to arise from the rapidly decreasing virulence of the poison when taken from the dog. The virus of cow-pox retains its full efficacy, if carefully preserved, for many weeks, or even months; but that of rabies would seem to die speedily away. Mr. Earle inoculated some rabbits with saliva taken from a dog that had died rabid. A strange anomalous disease speedily followed, in which some of the characters of rabies could be detected. Dr. Hertwig imagines that the virus retains its power twenty-four hours after the death of the animal from which it had been taken.

There are instances recorded of rabies being supposed to arise from the examination, with unsound hands, of dogs that had died rabid. Some of these accounts have not a little of the marvellous about them. Persons are said to have been wounded by the instrument with which a rabid dog had been destroyed many months before, and rabies has supervened.

This is a question which deserves future and careful experiment. What a rich field for experiment does the whole of our subject afford! Thus far I may state without fear of contradiction, that while, with very few exceptions, the disease follows the bite of a rabid dog, it does not so certainly follow inoculation with an armed lancet, or a seton cord impregnated with the virus

taken from the rabid animal almost immediately before. I have hinted at this already. It should be borne in mind with regard to many of the experiments that are made with the rabid virus. While the communication of the disease will be proof-positive of the condition of the animal from which the virus was taken, the failure of that communication must never be considered as a proof that the animal was not rabid. The fact seems to be undeniable, that the power of the virus rapidly diminishes when taken from the rabid animal, and that at no great distance of time it ceases altogether. The ascertainment of that time would be a very desirable matter; and especially would it be important to us, who, in our post-mortem examinations of dogs that had died under suspicious circumstances, are exposed to very much real or imaginary danger. At all events I have hitherto escaped, although in many dissections the saliva must have come into abundant contact with my hands, and they were not always sound. I used, if I could, to let four-and-twenty hours, at least, pass before I commenced the examination.

Different Persons and Animals are differently predisposed to become rabid.—Several breeds of dogs are covered with thick hair, and with a tough and thick hide which is not easily penetrated, yet three-fourths of the dogs that are inoculated with the rabid poison are lost. Of the sheep and the human being a great many more escape. There is a predisposition to be affected in the former which does not exist in other animals. There is an affinity between the virus and the tissue with which it comes into contact, or there is a facility for the growth and development of it. This may depend on natural idiosyncrasy; or on some peculiar state of the constitution at the time; or there may be that about the diseased animal which may render the poison exceedingly virulent at one time, and comparatively innocuous at another.

The Virus resides in the Saliva.—A poisonous fluid mingles with this secretion, or the saliva itself is altered in its properties. It is deposited, as I have said, on some tissue or fibril, and there it lies for an uncertain period dormant, or, at least, not appearing to exert any deleterious agency.

The Time of its Incubation in the Human Being.—There are strange and contradictory stories of this in the human being. Some have asserted that it has appeared on the very day in which the bite was inflicted, or within two or three days of that time. There would be no difficulty in deciding in what class of nervous diseases affections like these should rank. Dr. Bardsley relates a case in which twelve years elapsed between the bite and the disease. If the virus may lurk so long as this in the constitu-

tion, it is a most lamentable and dreadful affair. There are other accounts, but of a very questionable character, in which more than twenty years are said to have intervened. The usual time, I believe, is calculated at about six weeks, or extending from three weeks (Dr. Mason Good says, ten or twelve days) to six or seven months.

Dog.—I have never seen a case in which plain and palpable rabies occurred in less than fourteen days after the bite. The average time I should calculate at five or six weeks. At three months I should consider the animal as tolerably safe. I am aware that some of my brother-practitioners allow a considerably longer period: I am, however, relating my own experience, and I know but two instances in which the period far exceeded three months. In one of them five months elapsed, and the other did not become affected until after the expiration of the seventh month.

Horse.—The average time of the appearance of rabies in the horse is from one to two months after the bite. Three months having elapsed, I should consider this animal also as tolerably safe; but I know of one exception in which more than four months intervened.

Cattle.—The period of incubation is about the same as in the dog and the horse; perhaps it is somewhat less. I have no case on record in which it extended beyond the tenth week.

Sheep.—Here, also, the intervening time is short. I have several accounts of its appearing in less than three weeks after the bite, and not one in which the tenth week was exceeded.

The Cause of this Irregularity.—It appears, then, that there is great irregularity as to the time of the development of the full action of this animal poison; considerably more so than with regard to any other poison of this class. The quality and quantity of the virus may have considerable influence; so, also, may the predisposition in the bitten animal to be affected by the poison. It will naturally be supposed that the mind will have considerable influence on the maturation of a disease so completely of a nervous character; and so will the recurrence of certain periodical states in which the mental and bodily faculties are peculiarly exalted. If a bitch has been inoculated with the rabid virus, the disease will, in a great many cases, be fully developed at the period of œstrum or parturition. If it becomes connected with the former, she is then a disgustingly salacious and a fearfully dangerous animal;—if with parturition, her maternal love assumes the form of true monomania. She is shifting her young ones from one place to another—incessantly and violently licking them. It is a singular and horrible perversion of maternal affection. No

thought but of her offspring seems to occupy her mind, and yet she is utterly regardless, unconscious of the pain she is inflicting on them; and, in far less than four-and-twenty hours, they are all destroyed by her frantic love. The development of the disease seems to wait upon the completion of her time of pregnancy. It appears in the space of a month after the bite, if her parturition is near at hand; or it is delayed for double that time, if the period of labour be so far distant.

It is so even with the gluttonous and unintellectual sow. The development of rabies waits on the completion of utero-gestation. Her young ones, however, have a better chance. There is not that paroxysm of maternal feeling which is seen in the bitch; but she worries them incessantly, and occasionally destroys them. They and the progeny of the bitch may be taken from the mother, and reared without difficulty or danger. There is no hereditary bequeathment of the disease to them.

The Human Being.—The records of human medicine contain similar instances. A lady, five months advanced in pregnancy, was bitten by a rabid dog: she lived to give birth to her child, and exhibited the strongest expression of maternal love for it, but chastened by the superior intellectuality of the human being. Only a little while, however, passed, ere all the symptoms of rabies appeared, and she died. The child survived, and grew to be a man.

It may readily be imagined that, in a disease so essentially of the nervous system, the mind may have great influence (perhaps we must not say in retarding, but certainly) in hastening its development. There are many proofs of this on record. A lady had been bitten by a rabid dog. Time passed on, and she and her friends were beginning to hope that all danger was at an end, when, looking out of the window one day, she saw a mad dog pass. She was dreadfully agitated, and in a few hours every hydrophobic symptom was developed.

Two men were bitten by the same dog. It was incautiously mentioned in the presence of one of them, that the other had died hydrophobous. A sudden pain darted into the bitten part; every horrible symptom of hydrophobia speedily followed, and in less than eight-and-forty hours he, too, was dead.

I have too often been bitten by rabid dogs; but the proper means were always promptly adopted, and when I am well, and not too much harassed, I feel neither pain nor fear: but, many a time, when I have been more than usually deeply interested in cases that have been brought before me, or when I have been fatigued and irritated by the scenes which a veterinary surgeon occasionally witnesses, I have felt a sudden and lancinating pain in the

scar of one or another of the wounds, and a sickness at heart, that for a little while unmanned me. But all has presently passed away.

There is one dreadful story on record of the effect of strong mental disturbance in determining the period of attack. A young man had been bitten by a rabid dog. The proper means had been applied, and many a month passed over, and he and his friends had dismissed all fear. He married. In the wedding night the house was alarmed by horrible cries, and, on the door being broken open, it was found that he had destroyed his bride, and was literally tearing her to pieces.

Duration of the Disease.—This differs in different animals. In man it has run its course in twenty-four hours, and it rarely exceeds seventy-two. There is, however, one case on record in which, by repeated bleedings, it was protracted to the fourteenth day. In the horse it varies from three to four days; in the dog from four to six; and in the sheep and ox from five to seven.

ON INSTINCT.

By Mr. W. F. Karkeek, *of Truro.*

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To examine the economy of Nature in the phenomena of the lower animals, and to compare their instinct with the physical circumstances of their external situation, forms one of the finest speculations of natural history. The creation is a perpetual feast to the mind of man. He sees in it miracles of omnipotence: and as the study of Nature throughout is calculated to direct his attention to the Great First Cause, he cannot employ himself more rationally, I might perhaps say more profitably, than in contemplating her works; for, as the Author of Crayon observes, "there are homilies in them, worth all the wisdom of the schools, if we could but read them rightly." Akenside goes beyond him, when he says

> "The man
> Whom nature charms, with God himself
> Holds converse."

At all events it may not be too much, in reference to the subject of our panegyric, to pronounce, that the mind of man has gone a great way towards praise and thanksgiving when filled with

gladness in this pursuit; and such a disposition may be said to consecrate every field and wood by its presence, and to turn a morning walk into a morning sacrifice*.

In taking a survey of the animal kingdom, we discover a world of itself, containing a display of the most astonishing and essential varieties of structure and of function, difference of form and diversity of character. All the earth we inhabit, and perhaps its accompanying planets, is replete with various forms and modes of organic existence;—each element teems with living powers. The whole surface of the globe seems in motion, and a busy circle of animated movements and changes is incessantly going on: no climate, no spot, no element, seems exempt from the presence of living systems; they pervade all.

> "See through this air, this ocean, and this earth,
> All matter quick, and bursting into birth;
> Above, how high progressive life may go!
> Around, how wide! how deep extend below!
> Vast chain of being!

There is something common to all animals; and as certain as the phenomena of life are exhibited, so surely is there a motion in the animal matter evincing life. This internal and minute motion is produced through the medium of distinct organization and distinct functions; and we shall discover, as we pursue our inquiries, that though these functions are the same in all animals, there is an extraordinary adaptation of their organization, and that organization not only exhibits design, but a prospective design.

We will take an example from the simple fly—the larva creeping at the bottom of a pool. Now, anticipate its period;—take it up, and dissect it. You will find its wings folded up curiously; you will find them supplied with muscles, the muscles with nerves, the nerves with a source of energy. Nothing of the kind has as yet been put into use; but these things are prospective of the condition which the animal is to assume; and the deeper you probe this subject, the more you will be convinced of the adaptation of every thing to prospective design.

Take another illustration, to shew the extraordinary adaptation of the organization. We have a very good one in the kind of food taken by insects at the different epochas of their existence. Insects admit of two general divisions, founded on the mode in which they take their food, whether by suction or mastication. One species is *carnossial,* or lives on the juices of animals in its

* Nimrod.

first state, and subsequently becomes herbivorous. Another, on the contrary, is first *nourished on the debris of vegetables,* and afterwards cannot live except on the fluid or solid parts of animal bodies. Some, during a period of their existence, can absorb or suck their aliment in a liquid form, and, consequently, without mastication; while, under other circumstances, *the parts of their mouth having changed form,* they will attack nothing but solids. Here we have striking examples of the change of instinct, according to the change of the organization; and in the course of this Lecture I shall produce many facts to prove, that the peculiar instincts of animals depend on their peculiar organization. This is one of the principal positions which I hope to establish.

Comparative anatomy affords the strongest and most numerous proofs of the dependence of function on structure. Every variation in the construction of an organ is accompanied with a corresponding modification of function; and—to cut the matter short by an example or two—is the vital economy of an insect the same as that of a fish? or does that of either resemble the physiology of a quadruped? Do the very different teeth, jaws, muscles, stomach, and intestines of a cow and a lion perform the same offices? The visible fabric of the brain differs most widely in quadrupeds, birds, fishes, and insects. Is there not an equal difference in their intellectual phenomena, appetites, and instincts?

In commencing a survey of organized nature, I hardly know where to set out, so minutely regular is the connecting chain, so close is the analogy that links all, and so beautiful is the harmony that prevails throughout. Let us imagine such a chain, and, beginning with the most perfect and continued downwards, we shall find a tolerably regular gradation from complicated to simple through the whole series. At one end is man, at the other an animated microscopic drop of fluid: numberless gradations are placed between these, so that, though the two ends of the chain are immeasurably remote, there is close approximation between any two links.

It would certainly be ridiculous to attempt to speculate on the feelings of the animalculæ, whose world is a drop of fluid, and whose fleeting existence, chequered, perhaps, by various transformations, is destined to run its course in a few hours; yet nothing is more certain than this, that a link of sensitive existence may be traced from the animalculæ to the philosopher. I have scarcely occasion to remind you, that the number and kind of the intellectual phenomena discovered in different animals correspond closely to the degree of development of the brain.

The brain of the negro is inferior to that of the European, and the organization is also less perfect. The large cranium and high forehead of the ouran-outang lift him above his brother monkeys, but the development of his cerebral hemispheres and his mental manifestations are both equally below those of the negro. This gradation of organization and mind passes through the monkey, elephant, dog, horse, and to other quadrupeds; thence to birds, reptiles, and fishes, and so on to the lowest link of our imaginary chain.

Now, to bring this reasoning to bear upon our present inquiry, viz.—"the instinctive properties of animals,"—we find that, just in the same proportion as organization is reduced—that is, exactly as the organic parts are diminished in number and simplified—the development of instinct is the strongest, exhibiting in an almost miraculous manner the workings of a Divine power, and performing operations which the intellect and skill of man would in vain attempt to rival or to imitate. Whilst, on the other hand, as we ascend our organic chain, we shall discover that where reason and intellect are most powerful and sufficient as guides, as in man and most of the higher grades of animals, instinct is the weakest and least wonderful.

Hence it must necessarily follow, that extraordinary instinctive powers are not the result of extraordinary intellectual ones.

Now, if we confine our attention to those animals situated either at the top or bottom of our imaginary chain, there will be no difficulty in deciding those actions which are the result of the exercise of the intellectual faculties from those which are *instinctive*. But when we consider the actions of some of those animals that closely approximate to man, we discover certain qualities that approach so closely on the confines of both, that I confess I am at a loss to decide. There seems to be a mixture of reason and instinct combined that differs widely from pure instinct, or, at least, from what we are in the habit of considering as instinctive actions, that this principle in them appears on many occasions to be subordinate to a mental capacity, approaching to the reasoning powers of man.

But, ere we proceed further, it will be necessary that we should endeavour to define what instinct is. Could the bee and the ant tell us what it is that goads them to their several labours, and instructs them how to perform them, then, even then, we should probably have much to learn before we should be able to exclaim with the Syracusan mathematician, Ευρηκα, "I have unveiled the mystery." Without, then, attempting to give a logical definition of it—which, while we are ignorant of the essence of reason, is

impossible—we may call the instincts of animals those unknown faculties implanted in their constitution by the Creator, by which, independent of instruction, observation, or experience, and without a knowledge of the end in view, they are impelled to the performance of certain actions tending to the well-being of the individual and the preservation of the species; and with this description, which is in fact merely a confession of ignorance, we must, in the present state of metaphysical science, content ourselves. That instinct is dependent upon structure is very evident, as it invariably follows the development of the organization.

We will now proceed to consider some of those actions that are generally considered as purely instinctive. To do this we must have recourse to the insect tribe, and the best example that can be produced is found in the remarkable instance of the bees' cell. It is well known that the bees construct their combs with small cells on both sides, fit both for holding their store of honey, and for rearing their young. It has been demonstrated that, by making the bottom of the cells to consist of three planes meeting in a point, there is a saving of material and labour. The bees, as if acquainted with these principles of solid geometry, follow them most accurately,—the bottom of each cell being composed of three planes, which make obtuse angles with the side partitions and with one another, and meet in a point in the centre of the bottom; the three angles of the bottom being supported by three partitions on the other side of the comb, and the point of it by the common intersection of these three partitions.

Shall I ask here, Who taught the bees to build their cells of an hexagonal figure? If a honeycomb were the work of human art, every man of common sense would conclude that he who invented the construction must have understood the principles on which it was constructed. I need not say that bees know none of these things. They work most geometrically, without any knowledge of geometry—somewhat like a child, who, by turning the handle of an organ, makes good music without any knowledge of music. The art is not in the child, but in him who made the organ. In like manner, when a bee makes its combs so geometrically, the geometry is not in the bee, but in that great Geometrician who made the bee.

The wasp will afford us another remarkable example of pure instinct. She digs holes in the sand, and in each hole she deposits an egg; but how is the worm after it is hatched to be nourished? Here the instinct of the mother merits attention. Though she feeds upon flesh herself, and certainly knows not that an animal is to proceed from the egg, and far less that the

animal must be nourished with other animals, she collects ten or twelve small green worms, which she piles one above another, rolls them up in a circular form, and fixes them in such a manner that they cannot move. When the wasp-worm is hatched, it is amply stored with the food nature has destined for its support. The green-worms are devoured in succession, and the number deposited is exactly proportioned to the time necessary for the growth and transformation of the wasp-worm into a fly. The wasp-worm then issues from the hole, and is capable of procuring its own nourishment.

Now, in both these instances of the bee and wasp, the instincts undoubtedly follow the development of the organization, and are neither the result of instruction, nor of observation and experience, but the action of some external agency upon the organization which is fitted by the omniscient Creator to respond to its action.

Innumerable instances of this kind could be produced to shew that the instinctive actions of animals are not derivable from experience, and all evincing a foreknowledge of events which neither experience nor reflection would have led them to anticipate. The care which nature requires for the preservation both of the individual and the species has not been entrusted to the slow and uncertain calculations of prudence, but to *innate faculties,* prompting by an unerring impulse to the performance of the actions required for those ends. "Animals are seen providing against the approach of winter, the effects of which they have never experienced, and employing various means of defence against enemies they have never seen;—the parent is seen consulting the welfare of the offspring she is destined never to behold; and the young one discovering and pursuing, without a guide, that species of food which is best adapted for its nature."

In animals of the same species the instincts are invariably the same, though the individuals that compose it have never had an opportunity of learning this by any example. A canary bird hatched in a cage builds a nest similar to those formed by canary birds in their native woods, as nearly, at least, as she can with the materials that are given to her; yet she has seen none of those of her own species for a model.

The results of instinct are stable, and exactly adapted to the wants of its owner as a species, whether beast, bird, fish, or insect; but reason is a yielding quality, governed by circumstances, and accommodating itself to the particular inclinations or desires of the individual:—

"Reason is progressive; instinct is complete
Swift instinct leaps, slow reason feebly climbs.
Brutes soon their zenith reach; their little all
Flows in at once, in ages they no more
Could know, or covet, or enjoy."

The first is the privilege of man, and is the test of an intellectual nature;—the latter has something belonging to it almost mechanical, and marks no degree of superiority or merit in the possessor. *One* bee is as expert in forming the cell with geometrical exactness as *another*. Nor do they ever improve or degenerate; the bees of the present day do not excel those of the days of Adam.

Here, then, is a clear distinction between reason and instinct.

There is not, in my opinion, any thing more mysterious in nature than the instinct of animals, which thus rises above reason, and falls infinitely short of it. I have adduced sufficient to show that the intellect is not the great principle of instinct, yet I believe that it must be allowed *that all animals, gifted with the ordinary organs of sensation, more or less employ their intellect in the whole routine of their instinctive operations.* It is this circumstance that has led to a belief that instinct was capable of improvement. I will give a few examples that will explain this phenomena.

"A bee which Auber watched, while soldering the angles of a cell with propolis, detached a thread of this material with which she entered the cell. Instinct would have taught her to separate it of the exact length required; but, after applying it to the angle of the cell, she found it too long, and cut off a portion so as to fit it to her purpose."

A second instance is cited by Dr. Darwin, who informs us, "that, walking one day in his garden, he perceived a wasp upon the gravel-walk with a large fly nearly as big as itself, which it had caught. Kneeling down, he distinctly saw it cut off the head and abdomen, and then, taking up with its feet the trunk or middle portion of the body, to which the wings remained attached, fly away; but a breeze of wind acting upon the wings of the fly, turned round the wasp with its burthen, and impeded its progress. Upon this it alighted again upon the gravel walk, sawed off first one wing and then the other, and, having thus removed the cause of its embarrassment, flew off with its booty." Could any process of reasoning be more perfect? 'Something acts upon the wings of this fly and impedes my flight. If I wish to reach my nest quickly, I must get rid of them—to effect which the shortest way will be to alight again and cut them off.' These reflections, or others of similar import, must

be supposed to have passed through the mind of the wasp, or its actions are altogether inexplicable. Instinct might have taught it to cut off the wings of *all* flies previously to flying away with them; but here it first attempted to fly with the wings on—was impeded by a certain cause—discovered what this cause was, and alighted to remove it. The chain of evidence seems perfect in the proof that nothing but reason could have been its prompter.

To larger animals few philosophers deny some share of reason, but it is not generally accorded to insects; yet however difficult it may be to form a clear conception of this union of instinct and reason in the same operation, or to define exactly the limits of each, instances of these *mixed actions* are sufficiently common among animals to leave no doubt of the fact. "It is *instinct* which leads a greyhound to pursue a hare, but it must be *reason* that directs an old greyhound to trust the more fatiguing part of the chase to the younger, and to place herself so as to meet the hare in her doubles*."

The fact seems to be, that we, the little lords of the creation, are too prone to measure the sentient principle in animals by the scale of our own ideas, and thus unwillingly allow them to possess faculties which may surpass our own, though peculiarly appropriate to their respective natures. A little reflection must compel us to confess, that they are endowed with discriminating powers totally unknown to and for ever unattainable by man. But we will proceed higher up this imaginary chain of beings which we are contemplating, and take the birds for our observation.

It is towards the period of the birth of the young that the mothers put in requisition all the resources of their instinct; first, in the construction of the nest, and every species having an instinct and industry peculiar to itself, constructs its nest in its own peculiar way. The care of building the nest oftener devolves upon the female than the male, who seldom does more than collect and transport the materials with which she operates. Some males even do not give themselves any trouble about the matter, but leave the whole of the burden on their wife; and whilst she is busily engaged in binding and interlacing the sprigs of dried plants, giving the first form and solidity to the habitation, pressing in the materials which she has accumulated, and separating and arranging them by the movements of her body, so as to make a comfortable home for herself and family, her good-for-nothing husband is warbling his soft notes to another fair songstress of the grove. After the birth of the young ones, we find her busily engaged both in their education and in the amiable

* Spence on Instinct.

or rather sublime and generous self-devotion in protecting them. The swallow has been known to precipitate herself into an edifice of flames to rescue her devoted young ones; the hen does not hesitate to brave death in defence of her chickens; and the timid lark presents herself to the fowler to lure him from her nest —in fine, all these touching evidences of affection for the helpless, in animals so light and volatile in their nature, clearly indicate the sacred impulse communicated to all that breathe by the mighty Being who has willed the perpetuity and support of every species. Here, indeed, we recognize the workmanship of the Deity, in all its admirable wisdom, and surpassing benevolence;—*digitus Dei est hic!*

Among the many remarkable instinctive habits of birds, the migratory propensities of some of them are worthy of notice. There are various kinds that, during the summer months, visit our northern climate, and feed on insects whose multiplication would otherwise be boundless. Having fulfilled their office here, and on the declination of the sun, they again retire to the south; and are succeeded by different birds from countries still farther north, such as the woodcock and others, which escape to our shores from the rigorous cold of a polar winter*.

* *In February month*, the knot, goosander, Brent goose, Barnacle goose, wild goose, golden plover and curlew, begin to retire from the sea-coast, or other winter haunts, to their several breeding places in more inland situations.

In March, the widgeon, hooded crow, redwing, gannet, teal, merlin, pochard, woodcock, snipe, and jack snipe, take their departure from their winter quarters, and migrate to their several breeding places; whilst the chiff-chaff, wheat-ear, and stone-curlew, are amongst the few arrivals of migratory birds.

In April, the silvery-gull, cross-bill, green sandpiper, fieldfare, and Aberdevine, retire from our shores to more northern latitudes to breed; whilst the black-cap, white-throat, hay-bird, swallows, wry-neck, whinchat, ring blackbird, quail, turtle-dove, and the ruff, arrive from southern latitudes, and announce themselves by their peculiar call-notes, or song, continued until they begin to moult.

In May, the cuckoo, nightingale, redstart, wood-wren, sedge-bird, fauvette, swift, night-jar, and flusher, arrive from southern latitudes, likewise many other species, the females usually appearing a week or more later than the males.

In August, the Aberdevine, mountain-finch, cross-beak, turnstone, knot, sanderling, and many others, arrive from the north on their winter visit; whilst the cuckoo, swift, wry-neck, tit-lark, turtle-dove, lapwing, laughing-gull, puffin, and dottrel, retire to more southern latitudes to take up their winter quarters along with their young families.

In September, the black-cap, wood-wren, fauvette, nightingale, white-throat, grasshopper-lark, sedge-bird, chiff-chaff, hay-bird, chimney-swallow, flusher, night-jar, ring-blackbird, green plover, wheat-ear, and ruff, take their departure for the south, some in flocks, and others separately; some in

The order in which they appear and disappear is really wonderful; and what is very remarkable, inasmuch as it shews the combination of reason with instinct, those which absent themselves at stated periods, such as the swallow, for instance, return annually to the same spot to build their nests. It is a commonly received opinion, that these migrations are produced through a failure of food, or a cold temperature of the air; but seeing that many of them disappear in the summer season, when food is placed before them in the greatest plenty, we must seek for some other cause. The late Dr. Jenner informs us, in his "Observations on the Migration of Birds," that the influence which incites them to migrate is produced by the preparation which nature is making by a new arrangement in the structure of the sexual organs—the enlargement of the testes in the male and the ovaria in the female. Here, then, is another remarkable example of instinct, following the development of the organization, proving that the migratory propensities of birds is not the result of instruction, nor of observation and experience, but the action of some external agency upon the organization, which is fitted by the omniscient Creator to respond to its action. These birds are directed to our shores at a certain season of the year to produce and rear their young. This appears to be the grand intention which Nature has in view; but their presence here may answer many secondary purposes,—among these, they are undoubtedly sent to cheer the heart of man. Nature never gives one property only to the same individual substance. Through every gradation, from the clod we tread upon to the glorious sun which animates the whole terrestial system, we may find a vast variety of purposes for which the same body was created. If we look on the simplest vegetable, or the reptile it supports, how various, yet how important in the economy of Nature, are the offices they are intended to perform!

the day, but the greater number in the night, particularly by moonlight; while the fieldfare, gannet, snipe, jack-snipe, curlew, and bean-goose, arrive from their northern summer haunts.

In October, the window-swallow, the bank-swallow, red-start, fly-catcher, landrail, sandpiper, redshank, and hawk-owl, depart for more southern latitudes; whilst the woodcock, redwing, wood-pigeon, hooded-crow, shoveller, greyleg, teal, and merlin, arrive on our shores from the north.

In November, the golden-plover, poacher, gadwal, widgeon, Bohemian wax-wing, golden-eyed duck, and the stock-dove, arrive from the north, or from the more mountainous part of the country.

In December, the snow-fleck, hawfinch, Sarcelle duck, tufted duck, wild swan, lumme, cobble, velvet duck, Eider duck, goosander, and merganser, arrive on our coasts more or less regularly according to the severity or mildness of the weather; whilst the grey lapwing departs southward.

There is a perfect consistency in the order in which Nature seems to have directed the singing birds to fill up the day with their pleasing harmony. To an observer of those divine laws which harmonize the general order of things, there appears a design in the arrangement of the sylvan minstrelsy.

First the robin, and not the lark, as has been generally imagined, as soon as twilight has drawn the imperceptible line between night and day, begins his lonely song. How sweetly does this harmonize with the soft dawning of day! He goes on till the twinkling sunbeams begin to tell him his notes no longer accord with the rising scene. Up starts the lark; and after him a variety of sprightly songsters, whose lively notes are in perfect keeping with the gaiety of the morning. This general warbling continues, with now and then an interruption by the transient croak of the raven, the screaming of the jay and the swift, or the pert chattering of the daw. Yet all is perfect,—the interruption is of short duration, and without it the long-continued warbling of the softer singing birds would pall and tire the ear with excess of melody, as the exhilarating beams of the sun, were they not at intervals intercepted by clouds, would rob the heart of the gaiety they for awhile inspire, and sink it into languor.

At length evening advances, the performers gradually retire, and the concert softly dies away. The sun is seen no more. The robin again sets up his twilight song, till the still more serene hour of night sends him to the bower of rest. And now, to close the scene in full and perfect harmony, no sooner is the voice of the robin hushed, and night again spreads a gloom over the horizon, and the whole feathered choir which during the day made the woods and vales re-echo to their cheerful notes, are slumbering in the recesses of the grove, and

> "The sea-fowl is gone to her nest,
> And the beast is laid down in his lair,"

than the owl sends forth his slow discordant screech.

[To be continued.]

ON GANGRENOUS PERIPNEUMONY IN CATTLE, AND ITS MODE OF TREATMENT.

By M. H. Mathieu, *M.V. in Chief of the Department des Vosges.*

[A friend has lent us for a day or two a work which we had long ago ordered, the treatise by Professor Delafond on "The Sanitory Police," in France, so far as it regards the domestic quadruped. In our next number we trust that we shall be enabled to give an analysis, of a portion, at least, of this most valuable work*. Since the publication of this work, Professor Delafond has received various essays on the contagious diseases of quadrupeds. With the consent of the authors, and with great liberality on his part, he will publish many of them in the "Recueil de Médécine Vétérinaire Pratique." He is beginning with the diseases of the lungs in cattle, a subject of peculiar importance to the English veterinarian at the present moment. We shall, as our limits will admit, translate the substance of these essays. It will be seen that the disease treated on by M. Mathieu resembles, or is identical with that *acute inflammation of the lungs* in cattle which is occasionally epidemic among us, and which destroys so many valuable animals. Our old writers used to term it *gangrenous* inflammation, from the rapidity with which it ran its course, and the extreme congestion of the lungs, giving to them an appearance of *rottenness*.—Y.]

Gangrenous peripneumony in cattle, and which I should rather call *pneumo-sarcie,* because the lungs, instead of being gangrenous, are converted into a kind of black substance, compact and heavy, is a very serious and fearful malady. It is most frequent and destructive in the mountainous parts of the country. It is there, to a certain degree, *enzootic,* if not permanent; and it is only by means of its fearful contagious property that it appears among the cattle of the plains. In its native locality it is seldom that it is confined to one beast alone in the stable in

* There is a difficulty in procuring French scientific works in London, which we trust does not exist in Paris with regard to similar productions by English authors. We could give many illustrations of this. The "Mémoirs de la Société Vétérinaire du Calvados"—it was eighteen months after their publication before we could get them. It would seem that if a book is not published by the firm immediately connected with the agent in London, it is almost impossible to obtain it through his means. This appears to us strangely impolitic as well as illiberal, and should speedily cease in both countries.—Y.

which it is observed; and it spreads from that stable to the neighbouring dairies, respecting neither age nor sex.

Symptoms.—The animal loses its appetite—the secretion of milk is suspended—the muzzle is dry, and the coat is rough. Rumination is suspended—the temperature of the body is irregular, the ears and horns being alternately hot and cold—the excrement is either exceedingly hard, or it is perfectly fluid, and sometimes exhibiting streaks of blood—the dorso-lumbar portion of the spine, and the shoulders and the sides are tender. There is cough, frequent, dry, deep, and coming in fits—the respiration is short, accelerated, and laborious—and the breath is hot, and charged with more than usual vapour. On having recourse to auscultation, there is a peculiar sound resembling the crushing of paper. There is a discharge of mucous more or less abundant from the nostrils—an adhesive spume runs from the mouth—the pulse is quick, small, concentrated, and sometimes irregular—there is occasional moaning, and the animal is generally lying down. All these symptoms rapidly and fearfully increase.

Post-mortem Appearances.—The ravages of the disease are exclusively confined to the chest. The thorax generally contains two or three gallons of a thick yellow serous fluid, in which are numerous albuminous flocculi. The pleuræ are lined with false membranes of a yellow-green colour, thick and spongy—cysts are formed of a similar false membrane, containing fluid of the same character, and adhering either to the ribs or the lungs. The lungs are enlarged—apparently decomposed, and very easily torn—their tissue, which varies from a deep red to a black colour, is marbled, hepatized, much increased in weight, and retaining very few portions in which the air-vessels can be traced. The bronchi are closed by a white spumy mucus, or often by false membranes moulded to their varying capacity, or with packets or filaments of a firm yellow fibrous substance. If death has rapidly ensued—and it often does between the second and fourth day—the lungs are engorged with thick black blood, and the disease may truly be described as *pulmonary apoplexy.*

Causes.—Independent of what is peculiar to various *epizootics* and *epidemics,* and which will unfortunately remain, and perhaps always, unknown, contagion is the way in which this fearful disease is propagated. Next to this must be reckoned the numerous errors which often occur in the management of the mountain cattle. During the winter, these animals are crowded together in low stables, backed against the rock to their very top, without any other opening than the door and a few

simple air-holes, which, whether their elevation be four or five feet, are only level with the external soil. They have no litter, but they lie on an inclined plane, terminated by a reservoir, in which all their urine and dung are accumulated. This construction necessarily renders the air hot, oppressive, and mephitic —the cows are half-suffocated, and constantly covered with perspiration: therefore, how dreadful must be the determination of the perspirable fluid to the lungs when a cold wind corrugates the skin and closes all its pores; and especially when cold and clear water, drunk greedily, has chilled the interior of the body, long before the ardent thirst is assuaged!

On one hand there is a heavy, vitiated, hot air, preventing the action of the lungs, and permitting only an incomplete purification of the blood; and on the other hand, a perspiration incessantly determined towards the skin, and thence driven back upon the lungs by the least application of cold.

The circumstances which occasion an access of labour in the pulmonary organs, and a frequent arrest of the cutaneous perspiration, are not less active during the fine season of the year.

The lover of nature in her more majestic and imposing forms, who has travelled over our mountains, can tell how many different meteorological phenomena and sudden and strange changes of temperature he has witnessed in a single day. In the morning there are vapours dense and cold arising from the earth—at noon, a glowing sun and a serene sky—and at eve, a mist as thick and as cold as in the morning. Sometimes a black fog, or impenetrable clouds render the mountains quite invisible to the inhabitants of the valley, and, presently afterwards, every cloud will be dispersed, and the rays of the sun falling directly upon them, and reflected from every side, will be perfectly unbearable: this, again, is presently succeeded by an icy storm. The atmosphere is almost suffocating under the shelter of one of the hills—and unpleasantly sharp and rarefied a very little higher. Often, at the end of June, a long-continued snow follows a month of beautiful weather, or there is an almost continual snow storm on the summits *(chaumes)*, where a thick, short, and coarse grass, so grateful to cattle, is found. How many powerful causes of diseased affections of the chest! for sometimes the vegetation of these plants is sufficiently developed to permit the peasants to leave their cattle on these elevations during the whole of the spring, returning to the dairy only at evening, and there not remaining during the night. In addition to this is the coldness of the water at these elevations, and the power of drinking it at will. It is far more likely to chill the animal than that which is drunk at the stable door; for in all the pasturages the fountain by which they are sup-

plied is situated in some sheltered place, where the utensils of the dairy are cleaned.

Treatment.—1. Exceedingly restricted diet, amounting to not more than a tenth part of the allowance in health—the sprinkling of the food with salted water, especially if it is new—the mixture of some chaff or hay, and the removal of the animal from a damp situation, or exposure to great heat.

2. Warm drinks, frequently given, and composed of an infusion of bran, with a little barley or rye meal, and a good handful of kitchen salt.

3. One or two large blisters, eight or ten inches square, applied to the sides, the hair having been cut away, and the skin well rubbed with a rough brush before the application of the blister ointment.

4. The following powder administered thrice a day on a piece of bread:—Take of mustard one part, of flour of sulphur and cordial powder, two parts each, of fenugrec eight parts, and of common salt as much as of all the other ingredients together. A good pinch of this mixture is to be placed on a piece of bread, and given to the animal. The effect of this is rapidly and well marked; the digestive functions are roused, and the beast speedily recovers a portion of his natural gaiety. The muzzle becomes moist, and the dew-drops are again scattered over it. The beast is fond of this powder, and I would advise that it should be administered from time to time for a while after his recovery.

5. Three times in the day, and when the beast is fasting, the following sternutatory vinegar should be used, a tea-spoonful being introduced into each nostril, by means of a small phial or syringe:—Take of alum, sulphate of zinc, Spanish powder, and spirit of turpentine, each one ounce; camphor two drachms, and strong Burgundy vinegar, a quart. Reduce the solid substances to the finest powder; then mix them well together with the vinegar and the turpentine, and macerate them. Keep the bottle well stopped, and shake the whole well together before each dose is poured out.

The effect of this sternutatory is really astonishing. Immediately after its administration large tears trickle down their cheeks, while strong and long-continued snortings relieve them from the mucosities, and false membranes, and bands, &c. by which the bronchi are embarrassed. May this powerful excitation prevent the pulmonary hepatization and congestion, by re-establishing the sero-albuminous secretion, in the air-vessels and bronchial ramifications? or, rather, may not this violent excitant, by producing great inflammation of the pituitary membrane (*coryza*) act as a revulsive—a most efficacious counter-irritant,

and thus subdue the pulmonary inflammation? Such are some of the pathological considerations which may explain a medicine astonishing in its effects, which I regard as the very basis of my treatment, and which I have seen, again and again, followed with success. This medicine may be modified in various ways, if its agency should be tested on other animals afflicted with similar diseases.

6. Drinks obtained from the bitter and aromatic plants should be given two or three times in the day, if the disease should be attended by much debility. Of the bitter plants, gentian, patience and burdock will be preferred—and of the aromatics, the golden rod, wild thyme, cultivated ditto, angelica, sage, lovage, &c. will probably be chosen. An infusion can easily be made of these different ingredients well bruised.

7. A warm bran poultice should be continually kept on the loins.

8. The litter should be plentiful and dry—the animal fed from the hand—the house in which he is placed should be well ventilated, yet warm, and no current of air should be suffered to fall on him.

9. Morning and night, the vapour of vinegar and juniper should be plentifully diffused through the whole of the place. The chloride of lime would, probably, be a more powerful disinfectant.

Preventive Measures, the Disease not having yet appeared on the Premises.—1. The drinks and other things as recommended for sick animals.

2. The use of the sternutatory vinegar, and of the powder, once every day.

3. The withholding of half of the usual quantity of food.

4. The keeping those animals from work that appear to be predisposed to take on the disease.

This plan should be scrupulously adhered to for at least eight or ten days, and, afterwards, had occasional recourse to during the prevalence of the epizootic.

Means to prevent the Propagation of the Disease.—1. To separate as much as possible the sound animals from the diseased, and to appoint different persons to attend to the management of each.

2. To abstain from the sale or purchase of cattle.

3. To avoid all contact with those who have diseased animals.

4. To bury those that die, many incisions having been previously made into the skin and flesh, at a considerable distance from the house and stables, and as deeply as circumstances will admit.

5. Fumigations of chloride of lime in the stables in which any beasts have died—the washing of all the wood-work and utensils with the same lotion, or, in default of this, with boiling ley; and whitening the walls with lime.

Although I have never had recourse to *bleeding* in the treatment of this disease, I am far from blaming its occasional application, and I would particularly recommend it as a preservative measure. When any beast is hide-bound, or with a staring coat, or if she begins to lose flesh although she yet continues to eat, and especially if this happens at the close of winter, nothing can be more likely to relieve her, and to prevent the access of this and many other maladies, than the abstraction of blood. The quantity abstracted must depend on the size and condition and general state of the animal.

The curative and preservative method which I have thus recommended with regard to *pneumo-sarcie* is a very simple and cheap one, and easily put into practice; nevertheless, I would advise the proprietors of cattle to call in other aid. In a case so fearful as the breaking out of an epizootic, and such an one as this; and, indeed, in every case in which the health and condition of the animal is to any considerable degree impaired, I cannot too earnestly press upon them the necessity of availing themselves of the knowledge and experience of well-educated and skilful veterinary practitioners. They should especially apply to those who have been placed in our arrondissemens by the Government, or who have obtained diplomas from either of our schools. *Recueil de Méd. Vét. Fev.* 1838.

A CASE OF RED-WATER IN CATTLE.

By Mr. John Tombs, *Pershore.*

Dear Sir,—Herewith I transmit you a case of Red-Water (or change of water), as generally termed in this and the neighbouring counties, for publication; evidently proving the digestive organs and the liver to be the primary seats of disease. I will take especial notice of all cases that I am called to this season, and forward the same to you; but my mind has long since been made up on this point, viz. That the kidnies are never affected at the onset of this peculiar malady; but they appear to be in a torpid state when the disease has been a few days existing.

I am,

Dear Sir, your's faithfully,

John Tombs.

May 29, 1838.—I was requested to see a heifer a short distance from this town, and found her in a shed, looking extremely thin and dull—the eyes drawn into the orbits—drivelling at the mouth—grunting occasionally—horns and extremities warm—dew on the muzzle—pulse one hundred, and hard—refuses food and water. She was brought in from grass to-day. The herdsman had noticed her looking very thin, and separating herself from her companions for two or three days. While I was in attendance, she voided a gallon of exceedingly dark-coloured urine; in fact, it was as black as ink. It was caught in a vessel, and, after remaining an hour, there was no sediment, no coagulation of lymph or blood, but an uniform thick fluid. Her fæces are soft.

Treatment.—Bleed largely. Give ten ounces of Epsom salts, a drachm of calomel, and an ounce of ginger in gruel.

30*th.*—No improvement—she neither eats or drinks, nor does she ruminate. Pulse ninety-five, and weak; copious flow of saliva from the mouth. She lies down very much—general lassitude—fæces soft. Give medicine as yesterday, and large quantities of gruel.

31*st.*—Much the same—respiration hurried—lies down the greater part of her time; bowels relaxed—the fæces have a peculiar appearance from the effects of the calomel. This morning I perceive, for the first time, that the udder and teats are as yellow as saffron—the urine is much the colour and thickness of elder wine. I cannot bleed again, as the pulse indicates a state of debility. The fæces quite liquid. Give digitalis, tartar emetic, and nitre, with gruel.

June 1*st.*—Pulse ninety—profuse discharge of mucus from the nose—tunica conjunctiva and Schneiderian membrane very pale—no appetite. I drove her out of the shed, and she voided six quarts of urine, surprisingly altered in colour since yesterday: it is now like brown sherry wine. When brought into the shed again, she lay down quite fatigued. Repeat the medicine of yesterday, and give linseed and gruel.

2*d.*—Great prostration of strength—pulse eighty-five—udder and teats not so yellow—discharge from nostrils—fæces soft and slimy. For the first time she has eaten a few mouthfuls of grass. On the whole, I consider her a little better. Give aloes ʒiij, with digitalis and nitre as before.

3*d.*—Great improvement—pulse seventy-five—eats a little grass, and ruminates—the yellowness of the udder and teats has disappeared—nose dewy—stretches herself when she gets up—urine of a natural colour—fæces regular. Continue the digitalis and nitre.

5th.—Recovering rapidly—eats, drinks, and ruminates. Give plenty of gruel and infusion of linseed, and diet her with grass, bran, and hay.

7th.—Turned out in the day-time—appetite good.

10th.—Perfectly recovered.

SINGULAR INFLAMMATION OF THE RECTUM.

In order to fill up this paper, I will describe a singular case that came under my notice last year. I was requested to attend a heifer, the property of a grazier in this neighbourhood. When I saw her she was quite infuriated ; in short, bordering on madness ; her eyes staring, and injected with blood—the pupils dilated—pulse 100.

On minute inspection, I discovered coagulated blood on the tail and posterior part of the thighs. Suspecting rupture of the vaginal bloodvessels, I inquired whether she had taken the bull lately. The owner informed me that she had so three days before, and had been unwell ever since.

On examination, I found the vagina healthy, and the bladder empty. I then examined the rectum, and there found the mischief. The bull had introduced his penis into the rectum instead of the vagina. This intestine contained a large quantity of black blood, which was mixed with the fæces. She died in the night. I examined her after death, and found the bloodvessels of the brain gorged with blood; the rectum was like a distended bladder, and contained a large quantity of coagulated blood with the fæces : the other intestines were healthy.

A CASE OF RUPTURED SPLEEN.

By Mr. W. A. Cartwright, *of Whitchurch.*

I send you this case in consequence of seeing such a dearth of English communications in your last Number. I think it is really strange—not to use a stronger word. One would imagine that your table would be loaded with communications, from the number of veterinary surgeons scattered over every part of the country.

May 26th, 1838.—On this day Mr. Hatton, of the Fauls Green, sent out his brown gelding, four years old, sixteen hands high, rather less than half-bred, in good condition and apparently well up to the present time, to the field, to perform his duty in

the cavalry. He was not ridden in the ranks this day, in consequence of the rider having a bad leg. While out there did not appear to be any thing serious the matter with him: still the rider thought that there was something not right, as he shuffled about more than was usual or pleasant, and was eager to get at the grass. After remaining in the field more than two hours, he was brought home, and began to eat hay, and drank some water: this was about two o'clock, P.M.

At three o'clock I first saw him, and found that he had been uneasy and moving about, and pawing with his fore legs, and did not fairly take to his food: his ears, legs, and body were warm and comfortable—respiration pretty natural— pulse fifty-five, and no distention of the abdomen. He was now uneasy when I saw him, and moving about.

On considering the whole of the symptoms, I concluded that there was some irritation of the bowels; I therefore made a drink of flour-meat, and boiled ʒi of opium in it, and tried to drench him with it; but we could not get him to swallow more than a very little. I then gave him a ball with ʒi of opium, and he soon afterwards lay down, but almost immediately got up again.

5 P.M.—I again saw him. The symptoms were more mysterious. His pulse was about fifty, and rather indicating irritability; and although there came a force to the touch amounting almost to hardness, yet I thought there was some difficulty in the blood being driven along. As the symptoms were not violent, I left him alone, for the disease to develop itself. Mr. Hales, of Oswestry, veterinary surgeon of the regiment, saw him about this time, and thought he was affected by the opium.

7 or 8 P.M.—We saw him together: his pulse was still about fifty, and of the same character as before—the breathing but little accelerated—the conjunctiva pale: he lies down occasionally at full length, but does not roll over;—he has eaten a little hay, and drunk some water. He looks sometimes at his side, and seems anxious and heavy;—the mouth rather clammy —the perspiration is not increased. We now bled him from the left jugular. On pressing the vein, it felt flabby, and was not distended so much as it usually is: the blood was with difficulty obtained, and was very thin. I should think that we did not catch above two quarts, but when he lay down we found that he had bled nearly two or three quarts more. Give ʒiij of aloes.

9.—I now fancied to myself that he might have swallowed more of the drink than we thought that he had, and was labouring under the effects of a strong dose of opium, though it was contrary to my experience of the effects of this drug after

such a length of time. He now got worse fast. Pulse at the jaw almost gone, and not very distinct, except now and then at the chest. He would stand tottering about for some time, and then fall violently down any where. We began to fancy there was a rupture of a bloodvessel.

9 to 11.—During this time he was in a very helpless state, and once or twice rolled over; would tumble down about every twenty minutes—seemed insensible—pulse imperceptible at the jaw—ears deadly cold—of a cold sweat all over—breathing towards the last stertorous—and, when down, would gasp and struggle dreadfully, and, several times, to all appearance, seemed dying. Still he would rally again; but about half-past ten he fell to rise no more, gasping and struggling most of the time, but each struggle becoming fainter and fainter, until he died at about eleven.

Post-mortem Examination.—At seven next morning Mr. H. and I saw him opened. On cutting into the abdomen, eight or ten gallons of blood escaped, very similar in colour and appearance to the water that is voided by cows that have the black-water. On further examination, we came to a quantity of coagulated blood near to the stomach, and found that it proceeded from the upper surface of the spleen. On removing that viscus, we discovered a rupture in it, towards its largest end, of about five inches in length, and varying in width from an inch downwards. The peritoneal covering of the spleen appeared to have been recently ruptured, as its edges were as thin and well-defined as possible. The space thrown open that was ruptured was higher than the surrounding parts, and had on its surface a coagulum of black blood: indeed, this part of the spleen and the coagulum on it appeared very much alike—a mass of dark coagulated blood.

About the middle of the smaller end, on the same side, there was another tumour, similar to the first. Its form was nearly circular, about the size of the top of an ordinary teacup, and elevated about as much as a tea-saucer inverted. On cutting into it, there was the appearance of a mass of dark coagulated blood, like the ruptured one. The parts around it were natural; a very little more distention would, in all probability, have ruptured it. There was a good deal of spotted dark bloody deposit in the neighbourhood of the spleen on a portion of the diaphragm, between its coats, on its thoracic side.

The lungs were greatly inflated, sound, almost blanched, and the colour of calves' lungs. No blood in the heart, and that viscus quite flaccid.

The man said that, on skinning him, there was no blood in the vessels.

The *stomach* was merely full, but not at all distended.

Observations.—I am sure that this rupture was quite a recent affair, from the appearance of the ruptured edges of the peritoneum, and the spleen did not exhibit any chronic or other disease. It was, perhaps, fully as large as that viscus is generally found to be; but the size varies considerably while the animal remains sound. He had never been known to be unwell, and during the last three days all the quick exercise he had had was merely a short trot or slight gallop in a charge or two each day. His feed had been hay, and nine or ten pounds of corn a day. He was in fair condition, and by no means fat. His work had been generally in the team. I think it not at all improbable, that had this horse been ridden in the ranks on the day he died, he most probably would have fallen in some of the charges.

I am aware of only one other case like it on record in any of our English works, and that is to be found in the second volume of Mr. Percivall's Lectures.

CONTRIBUTIONS TO COMPARATIVE PATHOLOGY.

No. XX.

By Mr. Youatt.

RUPTURE OF THE TRACHEA IN A SAMBUR DEER.

1838, *May* 14*th*, 10 P. M.—I WAS sent for in great haste to see this animal, whose breathing had suddenly become most distressingly laborious, and almost threatening immediate suffocation. I found her in the deer-house, but I could hear her breathing at least ten yards from the door. Her head was protruded, and her flanks heaving, and her countenance expressing the greatest distress. She was always a wild and untractable animal, and could not have been caught when in health without extreme danger to herself and to the keepers. In her journey to us from Kingston farm, three years ago, she had bruised herself in every part. To have endeavoured to catch her in her present state of distressed respiration would have been certain destruction to her. I ordered two drachms of emetic tartar to be dissolved in her water, and a drachm of calomel to be concealed in bits of mangel wurzel, of which she was particularly fond.

15*th.*—I saw her again very early in the morning. She had eaten the mangel wurzel, but she had not touched the water. Her breathing was no longer to be heard until we came close to her, but there was more than usual heaving at the flanks. She

was feeding with apparent appetite. I now thought that a portion of her food had insinuated itself into the trachea, and caused all this disturbance. I however ordered twelve drops of the croton oil to be given to her in pieces of mangel wurzel. She took it readily, and ate it as I stood by. About twelve o'clock it freely purged her. Towards evening the difficulty of breathing returned, but it was not by a great deal so bad as on the preceding night. I ordered two drachms of emetic tartar to be again put in her water.

16*th*.—She took part of her drugged water in the night. The breathing began to get quieter about ten o'clock at night. She was comparatively easier during the night, and nothing seemed this morning to be the matter with her but a very peculiar labour of the flanks at each act of *expiration*. The coat was somewhat roughened. About eight o'clock in the evening the difficulty of breathing returned almost to the dreadful extent of the first night. It was distressing to look at her. The labour was evidently in the act of expiration. I expected that she would have been suffocated every moment; yet she would now and then take a bit of mangel wurzel from the keeper's hand, but it was almost immediately dropped. I suspected that I had a case of croup, assuming a periodical form, and I was at a loss in what manner to treat her, for I could administer no medicine but what she would take voluntarily. She would have furiously fought against the attempt to drench her, and it did not require any considerable struggle to produce inevitable suffocation. About twelve o'clock she became a little quieter, and took, concealed in the food before tried, two grains of the muriate of morphia, and a drachm of calomel.

17*th*.—This morning again she was comparatively easy; but fearing a recurrence of the exacerbation, I ordered her medicine to be given to her at six o'clock. It apparently produced no effect, for the spasm returned at eight o'clock, and was as violent as on the preceding night. "She is a ruminant," I reasoned with myself, "and probably the drugged food had not been so soon returned for remastication. She shall have her next dose at eight o'clock in the morning." The ravages of the disease were now getting sadly, and yet in a very singular way, evident. The sinking in of the flanks, even at the period of comparative quietness, was greater than I had ever seen in the most laboured respiration; and yet there was now no great dilatation of the nostril, or general distress; the head, however, was somewhat protruded. Except at the time of the exacerbation she fed as well as usual, but her countenance indicated much distress.

18*th*.—The medicine was given at eight o'clock in the morning, and the spasm did not appear at the usual time in the even-

ing. I, however, gave her two grains of the morphia at night, and determined to keep the constitution as long as I could under its influence; but I feared that I should not have power to do that long, for she began to suspect the cheat, and very carefully examined every bit of the root before she would take it.

19th.—The spasm has now appeared at the same hour in the morning. At a little after seven she was comparatively quiet, but at eight she was heaving distressingly; yet she was not quite so much distressed as she used to be in the evening. What am I now to do with her? she must have the morphia morning and night, the calomel being now omitted. About eleven o'clock she became a little easier, and after a great deal of persuasion she took her medicine. At night the spasm resumed its old time of appearance, but with an aggravated degree of severity. She was becoming rapidly emaciated—her strength was failing her, and she took very little food even of the kind of which she used to be most fond. Again and again, and most anxiously, I considered the propriety of opening the trachea; for I had fixed on the larynx as the seat of periodical spasmodic stricture. Now and then the idea of spasmodic asthma occurred: but there was not the peculiar wheezing of that disease; and, after the most careful examination, I felt convinced that the distress attended the act of expiration, and not of inspiration. I knew that the attempt to perform the operation of tracheotomy would be attended with extreme danger to all who assisted in holding her; and I did not like the thought of her dying under my hands. I consulted a very kind friend, a medical man, and one of the council; and he urged me by no means to hazard severe or permanent injury to myself and all who assisted in hobbling her. I therefore determined to continue the present course of treatment as long as I could, going back, however, to the emetic tartar, and doubling the quantity of the morphia.

20th, 21st, 22d.—The fit returns every night almost to a minute. On the 20th and 21st she took two drachms of the emetic tartar and eight grains of the morphia; but we can cheat her no longer, although we attempt it hour after hour. We get some nice fresh tares, and, opening the stalks, conceal a quarter of a grain in each. She took the whole of the morphia yesterday and this morning; but, at length, she found out that trickery. She will eat the very summit of the tares, but as soon as she gets near to the drug, she casts it from her with an expression of abhorrence. She must die, for she is daily losing flesh and strength.

23d to *31st.*—There is little variation except her certain although gradual decline of strength. The fits are shorter—con-

siderably so, but this is made up by increased violence while they do last; in her comparatively quiet moments there is greater and greater distress. If we attempt to cheat her now and then with the morphia, she turns sulky, and will not touch any kind of food for many hours afterwards. With the emetic tartar we do occasionally succeed.

June 1st.—This morning she was found dead. There was no disease in the abdominal cavity; but the lungs were in a state of great congestion, and the membrane of the bronchi was almost black. The cause of all her suffering was in the trachea. About half way down the throat one of the cartilaginous rings was actually torn from another. The strong elastic ligamentary band which united them was ruptured—dissevered—and nothing remained but a small quantity of cellular membrane, and that was almost perforated on the left side of the tube. There had been considerable effusion of blood in the cellular texture, and much discoloration still remained. There had, however, been no perforation of the skin, or we must have seen it.

Nature had been at work to repair the mischief, and had formed a fibrous substance between the severed cartilages: but, unfortunately, she had made it project inwards, and had so far diminished the calibre of the windpipe at that place, that my little finger would not pass through the stricture. This was the source of the evil. Much inflammation was set up, and the act of inspiration being naturally longer than that of expiration, and the air more rapidly hurried through the windpipe, and now being arrested in its course by the stricture, much inflammation would be set up in the lower portion of the trachea and the bronchial passages. They would be irritated by the presence and pressure of this undue portion of retained air; and hence the inflammation of the bronchial membrane, and the spasmodic character which, from causes that have never been sufficiently explained, attended the periodical exacerbation of this bronchial disease.

The mischief was probably done by the male Sambur deer, who was in the next box, and who is a sadly ferocious fellow. The point of one of his antlers is exceedingly sharp. He may have struck violently at her; the skin being here very moveable, might yield before the pressure and escape perforation; but the blow coming precisely between two of the cartilages of the windpipe, and that tube being little extensible, the laceration was effected.

A case of rupture of the trachea, but more fortunate in its termination, was related of a mare, in a veterinary journal of former days. The trachea was here perforated, which sufficiently accounts for the difference of symptoms.

RUPTURE OF THE TRACHEA, AND EMPHYSEMA IN A MARE.

On August the 5th, 1825, a cart mare was kicked about midway between the larynx and bronchial tubes with such violence as to rupture the trachea. The skin was not at all injured, or even the hair rased, the colt having no shoes on. The mare was suckling a foal, and pregnant also. She was working in the team immediately behind the colt, and he proving very refractory, kicked her with great violence.

She shewed evident symptoms of uneasiness immediately afterwards, in consequence of which the proprietor had her taken out of the team and bled copiously. In the course of the day she increased in bulk very considerably, and, by the following morning, was become of an enormous size. I then saw her, and proceeded to examine the spot on which the blow had been received. I very readily discovered the rent in the windpipe—it felt as if two rings had been broken. She did not seem to be in much pain, but was dull and dispirited. The pulse about sixty, and not hard. The emphysematous swelling, for such it evidently was, pervaded the whole exterior of the body; extending from the tips of the ears to the base of the tail. The legs were very much increased in size, and, in fact, the cellular membrane connecting the skin with the trunk was inflated almost as much as it possibly could have been.

To bleed was impossible, and the quantity taken away on the preceding day had rendered farther venesection an object of very little importance. I gave calomel in a full dose, and, afterwards, an aloetic ball. I also applied a bandage round the neck, moderately tight, having first placed a compress exactly on the injured part; and I directed these to be kept constantly wet with an evaporating lotion. She was placed in an airy loose stable, warmly clothed (the skin feeling rather cool), and a good deal of friction was frequently used. Green meat was allowed her in a moderate quantity, and water whenever she chose to drink. The bowels were freely moved, after which the emphysema considerably decreased. In about a week adhesion between the skin and the injured part beneath took place to such an extent as to preclude the farther escape of air into the cellular texture. The bandage was consequently discontinued. Friction was still applied to the skin, and she was walked out for an hour every day. Under this treatment she perfectly recovered, and, by the middle of September, she was able to work as usual.

The Farrier and Naturalist, vol. ii, p. 285.

STRICTURE OF THE TRACHEA.

A case more analagous is related in the same journal. It fell under the care of Mr. Cherry.

Feb. 28*th,* 1826.—A mare was passing along the road to her stable, when some one gave her a blow with a whip, and caused her to run on the point of a shaft, which inflicted a severe wound on the front of the neck, about three inches from the point of the sternum, and likewise injured the trachea very much. She was bled and physicked. The wound soon suppurated, and healed very well.

March 19*th.* — An abscess that formed contiguous to the wound, was opened. This also healed; soon after which roaring began to take place, and increased to such a degree that when she was put out of a walk she was nearly suffocated. This arose from a thickening of the parietes of the trachea, producing stricture of that tube at and a little below the seat of injury.

May 26*th.*—The owner being averse to any experiments or expense, Mr. Cherry purchased the mare. A portion of two of the rings was cut out; and two other of the rings divided by cutting through the cartilaginous rings to the length of six inches, and a leaden pipe was put into the opening. The labour of breathing was immediately very much relieved, and her appetite completely returned. The parts around the incision swelled a good deal externally, but otherwise no inconvenience was experienced.

The mare was turned out to grass, where she remained for a fortnight, the pipe being frequently cleansed from the fœtid pus and mucus which accumulated and dried in it.

At this period the difficulty of breathing returned. The trachea was again dilated, another and larger pipe put in, and she was as much relieved as before. The lateral action of the sterno-mastoid muscles had been such as to flatten the pipe that was first used, and a very strong pressure was felt whenever the fingers were introduced; so much so, that the parts closed unless kept asunder by the fingers or other means. When the pipe accidentally got out and remained so for a few hours, the trachea contracted, and the difficulty of breathing returned.

July 8*th.* — The granulations which had sprung internally had nearly forced out the pipe, and the difficulty of breathing had greatly increased from the narrowing of the passage. The wound and stricture were now dilated for the third time, and a leaden pipe, one foot long and two and a half inches in diameter, was thrust down the trachea, to below the point of the sternum. Relief was immediately procured.

After the first operation, the mare had for a time improved remarkably fast in fat and general appearance; but from the obstruction to breathing so frequently taking place from the ejection of the pipe, although every means were taken to prevent it, she had become much reduced, and nearly suffocated. Very soon, however, after this third dilatation, she ate and drank, and was as comfortable as before she met with the accident.

19*th*.—The pipe having been again forcibly and very frequently ejected, and the parts immediately collapsing, adhesions between the divided surfaces had taken place. It having been seen to what extent the operation was likely to succeed, the mare was destroyed.

The trachea was thickened where the pipe was inserted, and the structure of the cartilage much softened. The lungs were of a lighter colour than usual, and a small quantity of air was extravasated under the pleura.

A very remarkable circumstance is the easy manner in which the introduction of so large a pipe into the trachea was borne, so long as a free passage, sufficiently large, was kept open. Although the orifice was nearly opposite to the point of the sternum, breathing went on with as much freedom and apparent ease as in the most healthy and perfect state. The lining of the trachea scarcely shewed common irritability; and it was only when blood flowed into the lungs that coughing was induced. The relief produced by the operation was immediate, and for a time perfect; and the final failure arose from the accumulation of pus and mucus in the pipe (which precluded the possibility of its remaining permanently in the trachea), the strong disposition in the parts to collapse, and the rapid manner in which the new substance was formed. Whether these circumstances can be overcome by ingenuity and surgical treatment remains to be shewn: they are, however, formidable impediments in the way of a succesful termination to extensive openings of the trachea.

The Farrier and Naturalist, vol. ii, p. 226.

To Mr. C. Clark, *London.*

Sir,—It is my duty to direct your attention to the following Resolutions.—I have the honour to be, your obedient servant,

T. W. Mayer.

At a Meeting of Veterinary Surgeons, held at ——, on the —— day of June, 1838,

It was unanimously resolved to respectfully request Mr. C. Clark, of London, *to prove* (through the medium of The Veterinarian), *by a reference to well-authenticated facts*, the statement made by him, and inserted in that Journal in May last, which was to the following effect: "For a time the word *college* commanded respect; but the failure of all Mr. Coleman's *patents*, and the singular fact, that the peculiar theories which he enforces with most weight and vehemence, and which may be found floating in the brain and hanging on the tongue of every full-fledged pupil, are almost uniformly true when exactly reversed."

And as many of Professor Coleman's opinions have undergone considerable alteration and modification during the last fifteen years, it was further resolved, to recommend Mr. C. Clark to adhere to the consideration of the present opinions held by that gentleman on the several subjects Mr. C. C. alludes to.

Signed, on behalf of the Meeting,

Thomas Walton Mayer, V. S.

Newcastle-under-Line, Staffordshire, June 12th, 1838.

[We are at length enabled to redeem our pledge with regard to the state of veterinary literature in Germany. Our first extract is from a little pamphlet by our friend Dr. Hertwig, Professor of the Veterinary College at Berlin. It throws great light on the subject of mange. In every number we hope to be enabled to introduce something new and important from the writings of our German brethren.—Y.]

ON THE ACARUS, OR INSECT OF ITCH AND MANGE.

By Professor Hertwig, *of Berlin.*

In the itch (*scabies*) of the human being, there have long been observed from time to time small insects, recognized as a species of acarus. The earliest writer who has accurately described

them and their manner of piercing the skin, is the Arabian physician Avenzoar, who lived in the twelfth century. Not long afterwards the Englishman Moufet (*Theatrum insectorum*, fol. Lond. 1558) delineated and described them under the name of "Syrones." The Germans called them "Seuren." They were again described in the year 1557, by a Dresden physician, Hauptmann, in his work on Warm Baths, &c., under the name of Acari. Sp. Cyrones: in German "*Reit liesen*," and soon afterwards by Hafenreffer (*Nosodochium, Cutis affectus*, 1660), but not so correctly as by Moufet. The Italian, Bonomo, described and depicted them very correctly from his own observations, in a letter to the learned Rede*. The first known engraving certainly appeared early in the foregoing year, and without any name by which to discover the author of it: it was, however, far less accurate than the engravings in Bonomo's work.

The observations of Bonomo were in later times confirmed by many distinguished physicians and naturalists (namely by Cestoni, Bonanni, Mead, Baker, and others), while, on the other hand, many doubted or denied the existence of these acari, because they had vainly sought for them. Wichmann, saw them in 1786, and completed all that was previously known of them in his admirable work on the "*Actiologie der Krätze.*"

They, however, again eluded observation, for many medical men vainly sought for them until the year 1812, when Galés, a pupil at the hospital of St. Louis, pretended to have found them, and shewed them to many naturalists, and in a work on this subject described and delineated them ("*Essai sur la diagnostic da la gale, sur ses Causes*, &c.").

His engravings are quite different from those given by Bonomo and Wichmann, but perfectly agree with Geer's delineations of the cheese acari.

Finally, Raspail of Paris again saw them. He communicated his observations on them in his work, "*Naturgeschichte des Insekts der Krätze.*" He compared them with the mites of cheese and those of mange in the horse, and delineated them all. His drawings shew the itch mites to be in their characteristics essentially the same as those depicted by Bonomo; and proved in the most convincing way that Galés had never seen the acari of the itch, but that he substituted the cheese mites for them, and so imposed upon the scientific men of Paris.

Raspail describes these in the following manner:—

Sarcoptes, or Itch Insect.—The body is round, rather com-

* Osservazioni intorno a pellicelli del corpo umano, dal G. C. Bonomo, etc., Fiorenz. 1683.

pressed on each side, and formed something like a turtle; white, variegated by stripes, and the back roughened by hard warts. Of the eight feet, the four front ones are situated near the head, and in the form of a hand; the four hinder ones are farther from each other. The four front feet are also furnished with a species of sucker.

Species I. *Sarcoptes hominis.*—Insects found on human beings who have the itch: *acari scabiei.*

Species II. *Sarcoptes Equi.*—Insects found in the pustules of mange in the horse.

Raspail mentions no other species; but he says, that, no doubt, it will one day be discovered that the pustules in every kind of animal having the itch contain a different species of insect. It was not known to him that Walz had already, in the year 1812, found acari in scabby sheep and foxes; and had depicted those of the sheep; and also that Gohier had, in the years 1812 and 1814, found acari on horses, children, dogs, cats, and rabbits affected with mange, and had given drawings of those taken from the horse, in his *Memoires et Observations sur la Chirurgie et la Médécine Vétérinaires,* tom. ii, 1816; and that Bosc (in his *Diction. des Scien. Medicales,* tom. xvii) had also given delineations of the acari scabiei of the horse, the sheep, and the cat.

The natural history of this insect in the human being is, up to the present time, very imperfectly known. It is probably to be met with in all countries and in all climates. It is known in Greenland (*Fabricii Fauna Groenlandica,* 1780, p. 73); but it is oftener found in the southern countries than in the northern; at least, they have been frequently observed in Spain and Italy. They are also found to appear in greater numbers in particular seasons or years. It is not yet decided, although very probable, that similar observations may be applied to the development of many other insects. This insect, living only on and beneath the skin of men, is in no case known to pass to any other animal. It, however, lives a considerable time when removed from the skin. How long this is possible, under different circumstances, is not yet clearly ascertained. According to some experiments made by Albin Gras, it appears that they can live in pure water three hours; in vinegar, in alcohol of thirty degrees, and in a solution of kali carbonicum, twenty minutes; in a solution of sulphuric acid and kali twelve minutes; in turpentine nine minutes; and in a solution of arsenic four minutes. When not exposed to such violent and destructive measures, it has been said that the insect will retain life for five or six days; but, I believe, from a comparison of the acari of mangy animals,

and also from the infection lingering many weeks about utensils employed by persons having the itch, that it can live for a far longer time.

This insect is seldom found on the outer skin. When it is placed on the cuticle, it always seeks the nearest little furrow, through which it bores with its trunk until it can get its whole body through the upper skin, under which it makes its thread-like passages in different directions, and of various lengths. Raspail and Albin Gras call these passages "cuniculi," because they resemble those constructed by rabbits. The walls of these passages are sometimes so thickened by fibrous matter, that they form raised lines. A reddish mark, like a flea-bite without the red circle round it, or an oblong point, or a small pimple of a black or white colour on the cuticle, may be considered as the commencement of one of these passages. This spot usually shews itself on the head or at the side of a newly-risen vesicle (itch pustule), and in the centre of a small white fleck or spot; it is, however, found in different places according to the development of the vesicles.

Raspail and Albin Gras assert that the insects are never found in the vesicles, but always at the end of these passages. On the contrary, Bonomo, Cestoni, Wichmann, and Hecker, sen., who have paid much attention to this subject, say that they have generally found the insects at the end, and in the securest parts of the passages, but that they have also seen them in the bladders. (See *Wichmann's Actiologie der Krätze,* second edition, 1792.) As the passages and the bladders are situated so near to one another, a mistake may easily be made. It is seldom that two passages are found proceeding from one bladder, although many bladders are often seen near to one passage. Those mites which Albin Gras drew out of the passages were but one-third of their proper size.

It is yet to be discovered wherein the difference between the sexes consists, for no writer has hitherto described it, nor when and how the copulation takes place—where the eggs are deposited—how long the time of incubation continues—whether, as some writers affirm, the young mites have only six feet, and whether they really change their skin several times.

The acari of the horse were first depicted by Gohier and St. Didier, then by Bosc, and lastly by Raspail. St. Didier and Raspail have also given a short description of them. Bosc, Huzard sen., Latreille, Dumenil, and Geoffery St. Hilaire have likewise published some observations on them, but I have never seen them.

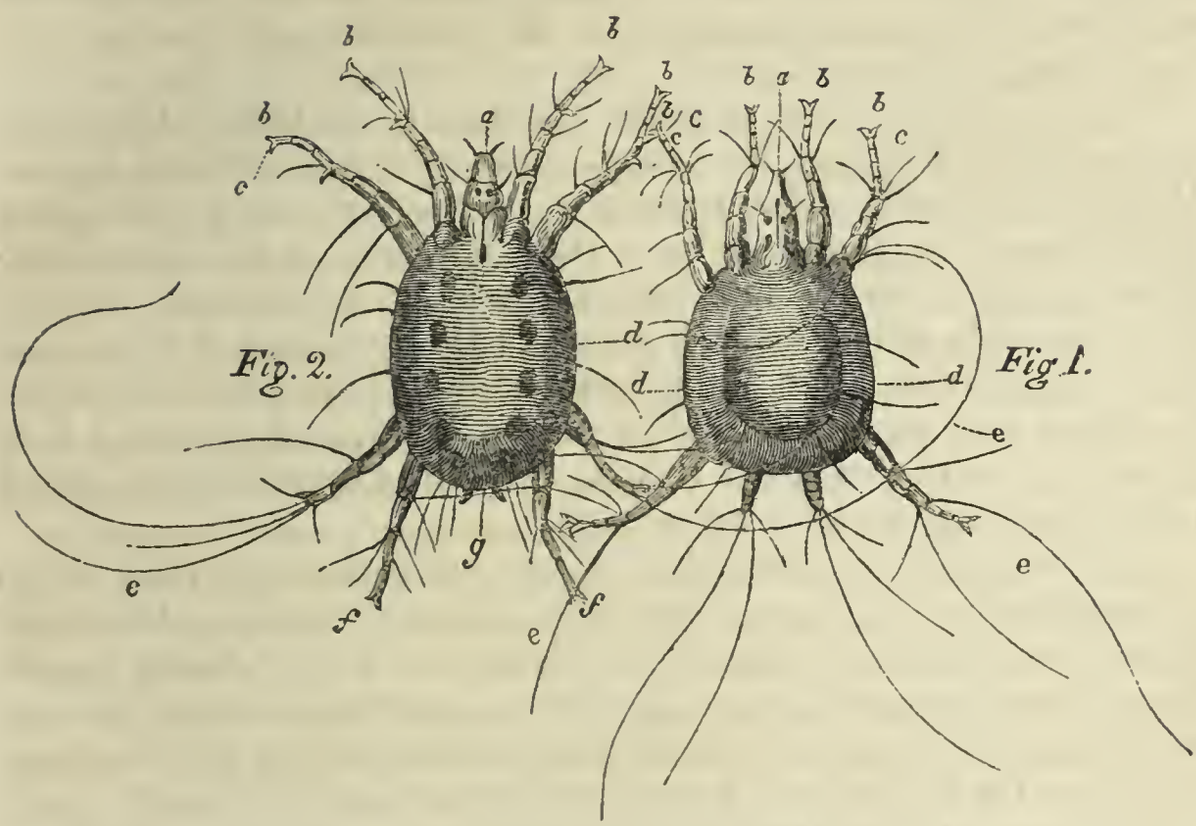

Figure 1.—The male insect.
a. The head—*bbbb*. the four fore feet—*cccc*. the suckers—*d*. the body—*ee*. the outer hind feet—*ff*. the inner hind feet—*g*. the hind parts.

Figure 2.—The female insect.
a. The head—*bbbb*. the four fore feet—*cc*. the suckers—*d*. the body—*ee*. the outer hind feet—*ff*. the inner hind feet.

These acari are larger than those found on the human being, and can easily be seen with the naked eye. They consist of males and females, that can without difficulty be distinguished from one another by the size and form of their bodies. The body of the male insect, when it has reached its full growth, is one-fifteenth of a line in length, and about the same in breadth; and when viewed from above or from below, has some resemblance to a square with the four corners cut off.

The thickness of the body amounts to about half its breadth. The back and the belly are moderately rounded. The whole body is covered with an elastic parchment-like skin, which, when viewed under a microscope, appears to be marked by a multitude of small furrows and raised lines. On the back these furrows mostly run across, and on the sides they principally run longways. They form together an irregular surface resembling that of morocco leather.

On the back is also seen an uneven hump, and on each side of it is a dark half-moon-shaped line—probably either a hollow, or a transparent part of the skin through which the bowels

glisten. More forward, and somewhere about the place which in most animals is occupied by the shoulder-blade, is found a moderately long stiff hair. On each side of the body, about the commencement of the hinder third part, are placed two other hairs, one of which is very short, and the other about as long as the body is broad. The under part of the body shews the same elevated and depressed lines as the back, but in different directions; and also at the fore end of the body are seen two reddish lines on each side, one pair between the head and the first fore foot on each side; and the others commencing between the two fore feet, and about the middle of the body, and continuing on towards the hinder parts: these two lines appear to be united about their middle by a cross band.

Raspail, who first described these appearances on the belly, recommends that, in order to make them more visible, the mites should be laid in concentrated sulphuric acid, by which means the albuminous portion of the animal resembling the white of an egg would be got rid of, and the remainder rendered transparent. By the help of a good microscope, however, these lines can be seen without the aid of the acid.

The head (*a*) is placed on the middle of the front edge of the coat of mail of the trunk, but is not covered by it. It possesses a tapering trunk-like form, and the point of it is directed downwards. The length of the head is about one-third of that of the body, and its thickness is a little more than are the fore feet at their commencement. The construction of the mouth is not yet satisfactorily known; it appears, however (so far as I have been able to discover by often repeated microscopical observations), that here are two distinct kinds of apparatus, namely, one for piercing through the skin, and the other for sucking up the nourishment.

For the latter purpose there is on the under side of the head, and about the place usually occupied by the under lip, a round trunk, thickened towards the body, the end of which is quite smooth, and furnished in the middle with a little hollow. This is slightly directed downwards; the animal can, however, move it at will in a moderate degree on all sides, and also shorten it a little.

For piercing through the skin, we find above this trunk, and resembling a cleft upper lip, two horizontal spears lying near to one another, formed of a horny substance, and something like the points of the blades of a pair of scissors. The animal can open them nearly to the width of its whole head, and then bring them again side by side, in which latter position they appear to be but one body; and it is only by means of the little furrow in

the middle that the two spears can be distinguished. It can also lift up these projections, or separate them from the trunk, and, when they are replaced, they lie on the trunk in the same manner as one jaw bone lies on the other.

Lastly, the animal has the power of protruding these spears either separately or together, and of withdrawing them again. When the spears are pushed forward to their utmost extent, they project beyond the trunk about a third part of the length of the head; and when quite drawn in, they lie under the upper skin of the head. As this skin is rather transparent, the opaque spears can be seen through it when they are drawn in, like two black lines situated close by one another.

When an acarus cannot easily get away from the place where he is (for instance, his legs are entangled with the legs of another mite), then we can clearly see the protrusion and retraction of these spears. This can also be caused by pressing the head of one of these animals between two plates of glass. When the animal is thus compressed, we can frequently, but not always, see a hair-like substance protruded between the trunk and the spears, about the same length as the latter, but half of it is thinner than them. The use of this part I do not know.

Near to where the spears are fixed, and on each side of them, is found a short fine stiff hair, the point of which is directed forwards and outwards; and rather above, and further out, is placed a second and shorter hair. Above these last mentioned hairs is seen on each side of the head, near to the edge, a rounded prominent and transparent spot, surrounded by a dark line. These spots have been supposed to be the eyes.

At a short space behind the eyes, the upper part of the head appears to be much thicker than at the front. The head is here united to the thick part of the throat, and can only be distinguished from it by its motions, which take place in all directions, and especially downwards. On the under side of the throat, shortly before it begins to be concealed under the coat of mail of the trunk, are seen a number of dark red spots near to one another, but at irregular distances.

The four fore feet (*bbbb*) are ranged two on each side of the body near to the head, directed forwards and a little outwards. They are throughout of equal form and consistence, their length generally agrees with the breadth of the body, and is about double the length of the whole head. Their thickness near to the body is about two-thirds of that of the head at its thickest part; it diminishes, however, towards the outer end so much as to appear almost pointed. Each foot is furnished with four joints easily distinguishable. The first of these, that is the one

nearest to the body, is partly surrounded by a little hard sheath, in and out of which it moves at the animal's pleasure. The joints themselves consist of a firm parchment-like substance, with a fine scaly cover, which is far harder than the skin (or coat of mail) on the trunk. The two first joints are each furnished with a tolerably long hair; the third joint has two shorter hairs; and on the fourth is found, near to three hairs, a sharp horny claw curved downwards and backwards, and near to that are the suckers (*cccc*) beforementioned. Each of these suckers has a stalk-like projection which is in length about the fourth part of the whole foot; and its thickness, when it is viewed under a microscope, appears to be double that of one of the hairs of the feet. It has three joints, and at its commencement under the claw of the last joint is very moveable. The suckers consist of a fine transparent skin, and are in their extended state three times as wide as the stalk, but when in their contracted state they are not perceptibly wider.

The four hind feet are situated two on each side of the trunk, somewhere about the commencement of the last third part of it, and fixed in such a manner, that one is directed outwards, and the other inwards and under the body. In the male acari the outer hind feet (*ee*) are placed quite at the outer edge of the body. They are as long as the whole body, and as thick, and formed in the same manner as the fore feet. They have at their end a sucker and a couple of very stiff hairs, one of which is more than twice as long as the whole body. It is crooked in different directions, and when the animal moves is usually trailed after him. The inner hind feet (*ff*) of the male are formed in the same manner as the outer ones, but are rather weaker and shorter; the end hair is only as long as the foot itself, and the suckers are wanting.

The male insects can only be distinguished by two small round dark spots on the under surface of the body, on each side of the middle line, and near to the hind parts (*g*). The last are found at the end of the body between two warty lumps which are covered with hairs; but neither the lumps nor the hairs are half so strong and so long as they are in the female. The female insect (fig. 2) is in the head (*a*) and the fore feet (*bbbb*) exactly like the male; the body (*d*) is, however, one-third longer than that of the male (about one-ninth of a line long), almost a perfect oval, and not so lumpy as the body of the male. Both the hinder feet are placed under the body near to one another. They are of equal length and thickness, but much shorter and weaker than those of the male, being only one-seventh as long as the body. The outside hind feet (*ee*) have likewise two equally long

hairs, they are, however, scarcely half so long as those on the foot of the male insect, and the claw, as well as the sucker, is wanting. The inner hind feet (*ff*) possess the rudiment of a claw, and under this a sucker like those on the fore feet, and near to it a fine hair almost as long as the foot itself. The difference of sex in the female insect is not easy to be distinguished; but the last described insect is the female; for when placed under a microscope eggs have very frequently been seen to proceed from her. If these are placed on the skin of a healthy horse, they change to young acari, and the animal becomes itchy; while, from the first-described, or male insect, eggs have never been seen to proceed.

The colour of the body of the male acari, when observed with the naked eye, is a glazed yellowish white, and that of the females a purer white, also glazed. The head and feet are in both sexes of a reddish rust colour, but the male insect is darker than the female. The body of the male, when placed under a miscroscope, appears of a dirty yellow, and that of the female under a bright light, of a blueish white colour. The suckers of both are white and transparent.

The number of female insects appears to be much greater than that of the male, in the proportion of six or even ten to one. Many female acari are always found running freely about, while the males are seldom found alone but almost always coupled.

The coupling seems rapidly to take place; for, when I have let several mites of both sexes run on a piece of paper, in the space of a very few minutes several pairs had united themselves together. How long they remained coupled is not known, but I have seen them in contact two, three, and even seven days. Neither is it clearly ascertained at what age the young acari begin to couple; it appears, however, to be very early, since I have seen young mites that had not been more than one day out of the egg unite themselves with full-grown ones.

After the coupling the female becomes perceptibly rounder, and, in from three to five days, she voids an oblong white egg covered with a hard, glazed pellicle, and which is almost a third part of the size of the body of the mother. The egg is usually covered with a sticky moisture, by means of which it easily adheres to any thing with which it comes in contact. Sometimes the mite draws the egg with its hind feet to some particular spot, but more frequently she does not trouble herself about it.

In the inside of the egg is found a substance like the white of the hen's egg, and which, even when placed under a micro-

scope, shews no trace of organization. The acari lay their eggs in little passages which they form under the skin. The young acari are produced from the eggs while in or under the skin, but it is impossible accurately to determine at what period after impregnation the egg is protruded and the incubation completed: all we can do is to notice as early as possible the time that intervenes between the entrance of a pregnant acarus under the sound skin and the appearance of young acari near the same place, and this, according to my observation, is generally from seven to nine days.

When the acari first appear, they are scarcely one-third of their complete size. They grow however very quickly, and reach their full size in three or four days.

Many writers have stated that the young acari change their skins once or twice. I will not pretend totally to deny this fact; but I have never observed it, and it would be very difficult to prove either the truth or the falsehood of it.

The young mites are exceedingly lively, and, in spite of their short legs, can run in the space of a minute over two inches of ground, whereas an old mite would only traverse an inch and a half in the same time. In walking they move their fore-feet in this order:—the outer fore foot on one side moves forward with the inner fore foot of the other side; and so on alternately. The hinder feet are very often only dragged along, and when they are brought into use at all it is only that pair which is furnished with suckers that move.

The power of retaining life in this insect is even greater than that of the acari found in the scab in sheep.

[To be continued.]

ON ANIMAL PERSPIRATION.

By I. J. H.

Dear Sir,—As a subscriber to and a reader of your very valuable journal, The Veterinarian, I feel it my duty to contribute my mite for the perusal of the profession.

An idea has lately struck me regarding "animal perspiration," and I am not aware that similar notions have been published by any one else.

It has generally been thought that perspiration was a mere eliminating process of nature—a channel by which that power freed the system from those matters that were not only dispensable, but injurious to the well-working of the animal economy.

This, no doubt, is the case in a great degree; but I conceive that animal perspiration was still farther ordained as a regulator of the heat of the body in severe exertion, in the same manner as we apply refrigerating lotions to an inflamed part.

I will fancy a horse to be galloped for a short time. The involuntary muscles quickly sympathize with those that are voluntary; circulation is accelerated, and a profuse perspiration shews itself. Now, if perspiration was a mere excrementitious process, would the animal have any more fluid now to dispense with than when in quietude? I think not, at least in a horse not over plethoric. It must be evident that, when the body is covered with this sensible perspiration, the abstraction of heat by evaporation is very great, and this must act as a salutary refrigerant to the over-heated animal.

Not that I mean to doubt the opinions that are generally entertained on this point, for the body is continually in a state of renovation, and there is a considerable portion voided by the exhalents; but as I think it is not necessary that the horse should perspire more in exercise than quietude, I cannot think that the Omnipotent would make any thing superfluous.

If you think this worthy of insertion, I should feel obliged by any of your correspondents expressing their thoughts on the subject in your next number.

AGRICULTURAL SCHOOLS.

[We perfectly agree with the Editor of that most valuable agricultural journal, *The British Farmer's Magazine*, that the following extract, from *The Quarterly Journal of Agriculture*, cannot be too strongly recommended to the notice of our readers, whether agricultural or veterinary. It has primary reference to the education of the sons of landed proprietors, but it sketches a system of tuition which no man can so well carry out, either alone or connected with some talented agriculturist, as the veterinary surgeon. Without his co-operation, indeed, a very important division of the necessary instruction would be inefficiently communicated. We have two or three of our professional brethren in our mind's eye, and one of them not far from the metropolis, who could profitably and well work out a plan like this.—Y.]

"Is it not," asks the writer, "passing strange that any country gentleman should be unacquainted with farming—the very source of his livelihood—when all other classes of people, in learn-

ing their respective professions, whether learned or vulgar, serve apprenticeships, and toil through life thereafter? It seems to be forgotten that land-ownership is a profession; and that it is in the manner in which *it* is conducted that the best interests of the country are injured or promoted."

The author proceeds to enumerate the pecuniary sacrifice and the loss of estimation in the opinion of others, and of themselves too, which they must incur who wholly entrust the management of their estates to a bailiff or steward. These officers are necessary to conduct various parts of the concern to which the proprietor has neither time nor inclination to give the requisite attention; but still the proprietor of the land should be fully capable of judging for himself of the management and working of the whole.

After a faithful picture of the inconveniences, losses, and degradations to which the proprietor of land, altogether unacquainted with agricultural affairs, necessarily exposes himself, the author of the paper thus continues: —

"Now the effects of all these evils, we venture to assert, may be most effectually remedied by the sons of landed proprietors, who will themselves become landowners, acquiring a thorough knowledge of farming in their youth, as a necessary branch of practical education: the management of their estates will then be felt a desirable gratification, and not a task.

"They would then discover that there is not a more rational, pleasing, or interesting study than the science of agriculture, and its practical application; nor one which can be so well combined with those manly sports and amusements in which it is the pride of our country gentlemen to excel. They would then have no temptation to reside abroad, but would discover that a knowledge of the minutiæ of farming creates a daily increasing interest in field-operations and the cultivation of stock. A personal acquaintance with their tenants would open a wide field of human nature for their observation; and this ample field to glean from, in connexion with the facts acquired in their own practice, would supply them with cogent arguments and illustrations on all subjects connected with agriculture, whereby their sentiments would command respect in every public assembly.

"Where is all this important knowledge to be acquired? It is to be acquired, like every other species of knowledge, by observation of the operations of nature, as displayed in the field of art.

"Is this question asked in the country whose proud boast is to possess more enterprising, educated, and well-informed farmers than perhaps any other kingdom in the world?

"In all the best-managed districts, where the mixed husban-

dry is practised, or the culture of stock and crop are combined, there are farmers well qualified to impart instruction in their profession, as well as possessing such cultivated minds as to render them valuable companions. A two-years' residence with an agreeable and intelligent farmer, who practises the raising of corn, with the breeding and management of cattle and sheep, and putting his hand to every kind of work, could not fail to impart to young men of ordinary capacity, a competent knowledge of farming.

"Such a tuition we consider absolutely necessary for the eldest sons, and for the greater part of the progeny, of our landed proprietors.

"We are entitled to speak confidently on this subject; for the foundation of our practical knowledge of agriculture was laid by an intelligent farmer, and most agreeable companion, in, perhaps, the best country for farming in Scotland; and never since have we had cause to consider the time mis-spent.

"Should these remarks attract the attention of those country gentlemen who may feel inclined to profit by them, we can furnish them with the names of some of the most eminent farmers who have been in the habit of taking pupils; and leave it to their own discretion to choose the most eligible situation.

"But we think the system of tuition might be beneficially extended. Most farmers, we apprehend, are not quite competent to teach the science of agriculture in connexion with its practice. Suppose, then, an extensive farmer has a large house, capable of containing a number of pupils, not exceeding twenty. That number we conceive to be enough for efficient and successful tuition. Let this house be sub-divided into comfortable sleeping apartments, a large dining-room, a large drawing-room, and a room fitted up partly as a library, and useful also as a reading and writing apartment. Let a tutor of competent acquirements be appointed to take the immediate charge of the pupils, both within and without doors. He should be able to teach the application of chemistry, although we are not so sanguine as most people of the utility of this science to agriculture. He should teach the application of the laws of mechanics, in order that the principle on which any implement operates may be comprehended—and of hydraulics, that the principles of draining, embanking, and constructing reservoirs for water, may be easily understood. He should teach botany, to enable young farmers to distinguish soils by their natural vegetation; and particularly the physiology of plants, that the culture of them of whatever kind may be in conformity with appropriate soil and situation. Also geology, that the sub-strata or sub-soils may obtain due regard.

Meteorology should be studied, in order to be able to anticipate the changes of the weather. The anatomy and physiology of animals are also requisite for him to teach, that the good points of live stock may be duly appreciated, and that we may be able to guard against some of the diseases which now so often thin our farms. And, above all, he ought to be acquainted with the practice of agriculture; for, although the farmer himself will, no doubt, undertake to teach this department of the system, yet, unless the tutor also understands it, he cannot so successfully demonstrate the application of science to the operations of practice. It may, at first, be difficult to find an assistant so amply qualified for the task; but as the practice of agriculture would most likely be the only department in which he would be deficient, he could, in the course of two years, acquire that knowledge as easily as any of the pupils.

"With colloquial prelections and discussions in the house, at stated hours, so as not to interfere with those of labour in the fields; and with demonstrations in the fields, whilst the labour was in progress, a vast mass of useful information would, in a short time, be conveyed to, and acquired by, the pupils: it being presumed that the pupils had already acquired, at school or college, the elementary principles of all these sciences, besides mathematics. Such a house should be situated on a large farm of not less than six hundred acres, on which the mixed husbandry is practised; that is, the growing corn, with the breeding and rearing of cattle and sheep.

"We think such establishments would be conducted much more satisfactorily on private speculation than under the guidance of any society or public commission. Both the farmer and tutor would be stimulated by their own interests, and competition would in time sharpen that stimulus still more keenly. Let any farmer, who has the requisite accommodation and qualification, begin the experiment with adequate appliances, and he will soon find customers. Like a coach or a steam-boat starting on a new line of communication, his establishment would attract pupils; whereas, if he waited until the demand for such establishments roused him into action, he might have to wait as long as the waggoner had for the assistance of Hercules."

THE VETERINARIAN, JULY 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

The English Agricultural Society has published its fundamental resolutions and purposes. Among them stands the following one,—all-important both to the agriculturist and to our profession: "To take measures for improving the veterinary art, as applied to cattle, sheep, and pigs."

By this public declaration, the society stands pledged to accomplish an object that has been dear to every ardent and honourable mind connected with our art, but which, until lately, we had been compelled to regard as far distant or never to be attained—*the extension of our art to all its legitimate branches.* While we hail with delight this hope of better days, it behoves us to devote every power to the honest working out of that which so nearly concerns us and our country.

A circumstance has just occurred which, if rightly improved, will materially contribute to hasten and secure the accomplishment of our wishes. The late Assistant Demonstrator at the Veterinary College is no longer connected with that institution. We express,—we feel no improper triumph at the removal of that gentleman. He possesses very considerable talent, and has thrown much valuable light on several points of equine physiology; but he was no comparative anatomist or pathologist: and the consciousness of that made him almost systematically divert the attention of the pupils from every thing that had not primary or exclusive reference to the horse. It would, therefore, have been with difficulty and with many disadvantages that the strict and useful examination of the ox, and the sheep, and the pig, and the dog, and the bird, could have been established in the dissecting room of the Veterinary College.

No gentleman has yet been appointed to superintend the dissections at the institution; indeed, the time for dissection is, for the present season, nearly or quite past: but ere the commencement of another session, a gentleman must be found fully compe-

tent to the task—a good horse anatomist—well acquainted with the formation of cattle and sheep—in the daily and long and pleasing habit of comparing the difference of structure in each according to its destiny and its use—and the admirable adaptation of every part to its precise purpose. In the whole list of veterinary surgeons is no such man to be found? Has not every reader one, at least, if not more, in his mind's eye, altogether competent to fill up the chasms that have hitherto existed—and that exist at the present day—in the College system of veterinary education, with reference to the anatomy and physiology of our ruminant, and omnivorous, and carnivorous patients, and competent also to unfold the nature, and causes, and successful treatment of some of those diseases which annually destroy hundreds of thousands of our most valuable animals?

We confess that we should have no difficulty in pointing out the man who, if he could be induced to make the attempt, would work all this perfectly out.

We are not confining ourselves to the duties of the office that has been lately vacated, so far as they have hitherto been discharged. We are considering the new field of exertion, of usefulness, and of honour which is unfolding itself, and which could by no one be better occupied than by this officer: or chiefly we refer to the imperious necessity of attending to duties which should not have been so long neglected.

If they who have the management of our national school are wise in their generation, they will seriously regard the events of the passing day. On the steps which in the course of a few months must be taken depend the future prosperity and honour of the institution. Let them honestly "take measures for improving the veterinary art as applied to cattle and sheep," and their reputation and well-being are established beyond the reach of malice or of accident. Let the student be perfectly instructed in every branch of his profession, and their school will increase with a rapidity and to an extent of which they at present little dream: but let them palter with their pupils, their veterinary brethren, and the united agricultural body; let them

> Palter with these in a double sense,
> Keeping the word of promise to the ear,
> And breaking it to the hope,

and from that moment their institution will decline. The students which they would otherwise have had will flock to other schools, or a new school will spring up and thrive in their immediate neighbourhood ; or the anatomy and diseases of cattle will form a prominent object in the curriculum of the Central Agricultural School, which will doubtless be ere long established, and before which every other institution that has been faithless to its trust will fade away.

Let us, however, hope for better things. If our teachers and governors will do their duty, the triumph of our art is now in good earnest commencing, and its progress is assured. We are confident that there is but one spirit, one feeling pervading the whole profession. It needs only to be expressed in order to secure the advantages which now present themselves. We offer our humble periodical as the medium through which this may be done. The course is easy—the result is assured.

The original prospectus of the Veterinary College states, that "the grand object of its institution is to form a school of veterinary science, in which the anatomical structure of quadrupeds of all kinds, horses, cattle, sheep, &c., the diseases to which they are subject, and the remedies proper to be applied, may be investigated and regularly taught, in order that, by these means, enlightened practitioners of liberal education, whose whole study has been devoted to the veterinary art *in all its branches,* may be gradually dispersed over the kingdom, on whose skill and experience confidence may be securely placed." This was the foundation of the institution. This was what a veterinary school ought to be. This is what the English Agricultural Society has pledged itself to carry into effect. Every thing is propitious. There is but one simple step to be taken—the institution of anatomical demonstrations of the structure and physiology of cattle and sheep, (which have been so long and so strangely and utterly neglected), and a *connected and full* explication of all the diseases of these animals, and the mode of cure.

The man who is to accomplish this must be young, and his faculties altogether unimpaired—he must be an anatomist, and a physiologist—and his heart must be in the cause. Is it diffi-

cult to find such an one? No! We once more repeat, that *every thing short of this will be completely delusive;* and for the present we leave the matter in the hands of those whom it most concerns—the profession. Y.

Miscellanea.

The Short Horned Cattle in France.

A very laudable, and we trust successful attempt has been lately made to introduce a foreign race of cattle, chiefly calculated for the greatest possible production of flesh. M. Yvart has especially distinguished himself in the attempted accomplishment of this object. He has brought from England to Alfort a herd of short-horned cows. The object of the Administration whose directions he obeyed, is to enable our countrymen to study and to propagate that race of cattle which the English agriculturist most valued for its fattening properties.

This attempt was the more opportune, inasmuch as the consumption of animal flesh is augmenting, and will more augment, in our country, both on account of the increase of our population and our wealth, and also the great public works that are in execation, and in which thousands of individuals will be employed, and each one requiring an increased quantity of nutriment, protionate to the expenditure of animal power.

The English short-horned cows may now be seen in the pastures of Alfort, side by side with the long-woolled sheep of England, and by one of those striking (*piquants*) contrasts that are occasionally observed, in what a variety of forms and channels the increasing capital of a rich agricultural kingdom may be divided, incorporated, and circulated.

Annales de l'Agriculture Française, Juin 1838.

Dog-Fair at Bourbon-Vendée.

That district of France in which the greatest number of sporting men and sporting exhibitions is to be found is certainly La Vendée. It is to this district of the kingdom that the lovers of field-sports in every other department go to obtain the best ani-

mals for their stables and their kennels. Many of the peasants of the neighbouring country have lately devoted themselves to the breeding and training of sporting dogs. The Poitevine breed is as beautiful as it is good. With as fine a form as the Normandy dog, it is stronger, stauncher, and more speedy.

This year, the municipal administration of Bourbon-Vendée has established two dog-fairs. The first of them was held on the 14th of May, and it much excited the curiosity of amateurs. More than 500 dogs were offered for sale. The next fair will take place on the first Monday in July; a considerable concourse of strangers is then expected.

Journal des Haras, Juin 1838.

Fattening Pigs on Acorns.

Instead of permitting them to pick up the acorns and eat them raw, it is recommended to bake or roast the acorns in an oven, and then to crush and boil them. The infusion is given to the pigs, which they eagerly drink, after which a little salt is added to the grounds, which are then devoured with avidity. The hogs fatten much more quickly under this treatment than when they run wild, and eat the crude acorn.

Annales de l'Agriculture Française, Juin 1838.

A Singular Equestrian Feat.

Among the beautiful ruins with which Spain is covered, one of the most remarkable is the ancient aqueduct, destined to convey water from the springs of Armentera to Torragon. This aqueduct, composed of a double range of arcades, and one of the best preserved in the country, has a beautiful appearance on account of the sculpture with which it is embellished, and the exquisite relief of its architraves.

On account of their height, and for the sake of strength, these aqueducts are generally broader at the base than at the top; indeed, they generally terminate in a simple gutter, more or less deep, according to the volume of water which they have to carry, but always very narrow. A cavalier, in a moment of folly, undertook to traverse on horseback the whole length of this water-course,

not having remarked that there was a large breach in it, precisely at the spot where the valley below was deepest. Having arrived at this point, it was impossible for the horse to turn, and it would have been most annoying to the rider to have dismounted, and traced his way back on foot. He spurred his horse—the noble animal sprung forward—vaulted over the chasm—reached the narrow footing on the other side, and won the wager. "We recommend," says the Comte de Montendre, "this instance of Castillian intrepidity to the admiration of the Jockey Club." None of the absurd and daring attempts of the heroes of the steeple-chace can vie with this.

Journal des Haras, Juin 1838.

A List of Students who have obtained their Diplomas at the Royal Veterinary College, St. Pancras.

May 30*th.*

Mr. John Gibson, Manchester
Mr. E. Sewell, Brighton
Mr. John Green, Cheltenham
Mr. Thomas Richardson, Clonmel.

June 2*d.*

Mr. James Law, London
Mr. Thomas Rooks, London.

TO CORRESPONDENTS.

The advertisement in *Bell's Life in London* was from Mr. Smith, of Louth.

The adjudication concerning which some of our friends inquire will not be made until the 1st of September: 34 to 1 are long odds.

THE

VETERINARIAN.

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ANIMAL PATHOLOGY.

By Mr. YOUATT.

LECTURE XXI.

The Poison received—No Indication of its Presence—The Nature of the Virus—Lies dormant—At length begins to act—The Pain in the bitten Part—The Absorbents now begin to act—The Empoisonment of certain Secretions—In a few Instances passes away—Preventive Measures—Quarantine—Tax on Dogs—Dog Pits—Petted Dogs—A Ligature above the bitten Part—Stream of Water on it—Cupping Glass—Suction—Excision—The Cautery—The Lunar Caustic—Effect of the Application of the Caustic—Operations after the Appearance of the Disease defended.

IT is time to close our inquiries respecting this fearful subject; but, in order to make our course of lectures complete, I must refer to, and repeat, but in a condensed form, a portion of that which, on former occasions, I have had the honour of laying before you.

An animal, or a human being, is bitten by a rabid dog, and a certain portion of the poison is received into the wound. It produces no immediate irritation. There is little to indicate its presence. Some old writers used to recommend the placing of the fresh leaves of rue on the wound. If they retained their colour, it was not envenomed. If they changed to a violet hue, the wound was empoisoned. Others recommended to rub a bit of bread in the blood or fluid discharged from the wound. If there was no danger, a dog would readily eat it. If the wound had been contaminated by the rabid virus, he would refuse the sop, and express his horror by a peculiar howling.

These fooleries are now despised. There is little to indicate the presence of the virus. The wound heals as would another wound, according to its situation, magnitude, laceration, and the

constitution of the patient. Days and weeks and months pass on, and it is rare that any circumstance occurs to indicate impending danger.

Of the nature of the virus we are totally ignorant. It has never been analyzed. That would be a process difficult to accomplish. It is not diffused through the air—it is not communicated by the breath, nor by any effluvia, nor even by actual contact, if the skin is sound. It must be received into a wound. It must come into contact with some cellular or other tissue, or nervous fibril, and there it lies dormant for a considerable but uncertain period.

It remains perfectly undecomposed. The absorbents are actively at work in removing every thing around. The nutrient vessels are depositing fresh matter, but it continues altogether unchanged. Whatever else is useless, or would be injurious, is taken up. The tissue or fibril on which the virus rests is modified or changed; but this extraneous and fatal substance bids defiance to all the powers of nature.

We have a thousand proofs of the power of choice in the absorbent vessels. The lacteals will carry to its proper destination the nutrient portion of the food, while that which has nothing about it that will contribute to the building up of the frame is suffered to pass by untouched. The sphacelated and decomposed materials of an ulcerated surface will often rapidly disappear, while the granulations of a healthy wound receive fresh accessions of substance.

The rabid virus enters not into the circulation, or it would necessarily undergo some modification in its passage through the innumerable minute vessels or glandular bodies that are scattered through the frame. It would excite some morbid action; or if it were not thus employed, or in the purposes of renovation or nutrition, it would be speedily ejected.

It lies for a certain period dormant, and far longer than any other known poison: but, at length, from its constant presence as a foreign body, it may have rendered the tissue or nervous fibril more irritable and susceptible of impression; or it may, at length, have begun to attract and to assimilate to itself elements from the fluids that circulate around it; and thus, increasing in bulk, may finally, according to a law of chemistry, supply by quantity that which it wanted in strength of affinity*.

* Dr. Darwin (*Zoonomia*, § xxii, 33) and Dr. Percivall (*Lond. Med. Jour.* 1789, p. 299) doubt whether the virus is ever absorbed; and Dr. Thompson (*Med. Chir. Journ.* 1825) coincides with them. He says that the lymphatic glands have never been found to be affected, although the branches of the cutaneous nerves running from the wound have often been inflamed. The

Whatever be the *modus operandi*, the parts in contact with the virus at length respond to the stimulus applied. The cicatrix generally begins to be painful, and inflammation spreads around it. It has already been stated, that the diligent licking of some part is an early and frequent symptom of rabies in the dog. This itching or pain is of frequent occurrence in the human being; and the circumstance would have been oftener placed upon record had inquiry been made respecting it. The absorbents are now called into more powerful action. They begin to attack even the virus. A portion of the morbific matter is taken up and carried into the circulation. The poison now pervading the frame possesses the property of assimilating some of the secretions to its own nature—or that poison, peculiarly determined to one of the secretions, alters the character of it—envenoms it—and gives it the power of propagating the disease.

This, in fact, is but the history of many an animal poison. In variola and the vaccine disease, the poison is determined to the skin—in glanders, to the Schneiderian membrane—and in farcy, to the superficial absorbents. These parts of the frame become the *depôts* of the poison, and through their medium it may be communicated to other beings. So it is with the salivary glands of the rabid animal. In them it is formed, or to them it is determined; and from them, and them alone, it is communicated to other animals. The flesh of the rabid ox has again and again been eaten. Certain portions of every rabid animal were considered as valuable prophylactics, or sure preventives.

Some of these diseases run their course and exhaust themselves. Cowpox, and farcy, in many instances, have this character. Perhaps to a certain degree it may be affirmed of all of them. I have already stated that I have seen cases, which I could not mistake, in which the symptoms of rabies were, one after another, developed—the dog was plainly and undeniably rabid, and I had given him up as lost: but, after a certain period, they began to be less distinct—they gradually disappeared, and the animal returned to perfect health. This may have formed one ground of belief in the power of certain medicines, and, most assuredly, it gives encouragement to perseverance in the use of remedial measures. If there are cases, and cases there are, in which the disease yielded to the unassisted powers of nature,

virus remains dormant in the part where it is deposited by the tooth of the rabid animal, until a certain state of habit renders the nerves in its vicinity susceptible of its influence; and this being communicated, a state of action is begun in these nerves, and extended by the respiratory nerves, which induce the whole train of symptoms constituting the disease. *He* doubts whether there ever is absorption.

it is not too much to hope, that we may at some future time be able materially to assist her in her struggle, or, perhaps, to fight the battle without her aid.

Then, gentlemen, it has been proved, and I hope demonstratively, that rabies is propagated by inoculation. I do again ask for one decisive proof of the contrary. It has also been established that, although every animal labouring under this disease is capable of communicating it, yet, with very few exceptions, it can be traced to the bite of the dog. It has still farther been shewn, that the malady generally appears at some period between the third and the seventh week from the time of inoculation. At the expiration of the eighth month the animal may be considered to be in a manner safe, for there is only one case on record in which the disease appeared in the dog after the seventh month from the bite had passed.

Then it would appear that, if a species of quarantine could be established, and every dog were confined separately for eight months, the disease would be annihilated in our country; or could only re-appear in consequence of the importation of some infected animal. Rabies is progressively increasing in Great Britain, and in most of the European states. The number of cases of rabies that have occurred in the present year is most fearful. My late partner, Mr. Ainslie, has had more than forty. To whatever extent it may progress, such a restriction could never be enforced, either in the sporting world or among the peasantry. Other measures, however, might be resorted to in order to lessen the devastations of this malady, and that which first presents itself to the mind as the cause of rabies is the number of useless and dangerous dogs that are kept—in the country for the most nefarious, and in the neighbourhood of considerable towns for the most brutal, purposes.

In almost every large town a dog-pit, a perfect nursery of crime of every description, is to be found. I will not trust myself to speak of the barbarous deeds which used to a horrible extent to be there perpetrated. They were libels on human nature. In the neighbourhood of the metropolis, and, I believe, of other large towns, the public dog-pit has been put down; but the system of dog-fighting, with many of its attendant atrocities, still continues. There are many more low public-houses than there used to be pits that have roomy places behind and out of sight, where there are regular meetings for this purpose; and certain of our young aristocracy keep fighting-dogs at the repositories of some dealers in the outskirts of the metropolis. There these animals remain as at livery, and their owners come at their pleasure and enact what brutalities they please. I will not enter

into the nature of these transactions, nor will I describe the thousand instances which the peculiarity of my practice used to bring under my notice, of the inevitable destruction of humanity, honour, and honesty, in all who were deluded to frequent these sinks of infamy; but, without the slightest hesitation, I will affirm, that rabies is propagated, nineteen times out of twenty, by the cur and the lurcher in the country, and the fighting-dog in town. It was only yesterday morning that two bull terriers, belonging to some well-dressed young men, fell upon a poor half-blind, lame, and aged dog, and would have torn him to pieces had not their master, ashamed of the exhibition, at length interfered. To-day, the same scene has been repeated, and by the same brutal biped and quadrupeds.

A tax should be laid on every useless dog, and doubly or trebly heavier than on the sporting-dog. No dog, except the shepherd's, should be exempt from the tax, unless, perhaps, the truck-dog, and his owner should be compelled to take out a license—to have his name in large letters on his cart—and should be heavily fined if the animal was found loose, or used for fighting.

The disease is rarely propagated by petted and house-dogs. They are little exposed to the danger of inoculation: yet we pity, or sometimes almost detest, the folly of those by whom their favourites are indulged and spoiled even more than their children; and in the course of these lectures we have had to recount the narrow escapes which some have had, and the loss of life incurred by others, arising from the indefensible and beastly habit of fondling these animals. Dr. Murray bears very hard upon the ladies with regard to this. "There is a most reprehensible practice," says he, "in making pets of snarling puppies, pug-dogs, or French poodles and Italian greyhounds; and the lap of its mistress, or a couch of down, clothed sometimes with silk or satin, must be the brute favourite's place of repose. Of all the degrading and contemptible acts exhibited in the drawing-room or the parlour, this is at once the most reprehensible and dangerous, and it is from this source that numerous cases of the ill-fated disease--rabies—have sprung. We cannot but condemn in the most unequivocal terms all such canine favouritism, as at once disgusting and degrading, and an insult to reason and humanity*." While I am a friend to dogs, for they are honest creatures, and seldom fawn on those they love not, I do most cordially agree in the Doctor's reprobation of a practice loathsome in itself and sometimes attended with danger.

A person has had the misfortune to be bitten by a rabid dog;—

* Murray on Hydrophobia, p. 47.

what course is he to pursue? What preventive means are to be adopted? Some persons, and of no mean standing in the medical world, have recommended a ligature. The reply would be that this ligature must be worn during a very inconvenient and dangerous period of time. The virus lies in the wound inert during many successive weeks or months.

Dr. Haygarth first suggested a long-continued stream of water upon the wound from the mouth of a tea-kettle. He says that the poison exists in a fluid form, and therefore we should suppose that water would be its natural solvent. Dr. Measey adds to this, that, if the wound is small, it should be dilated, in order that the stream may fall on the part on which the poison is deposited. I am far, however, from being certain that this falling of water on the part may not by possibility force a portion of the virus farther into the texture, or cause it to be entangled with other parts of the wound.

There is a similar or stronger objection to the cupping-glass of Dr. Barry. The virus, forced from the texture with which it lies in contact by the rush of blood from the substance beneath, is too likely to inoculate or become entangled with other parts of the wound.

There is a greater objection to suction of the wound, for, in addition to this possible entanglement, the lips or the mouth may have been abraded, and the danger highly aggravated*. There also remains the undecided question as to the absorption of the virus through the medium of a mucous surface.

Excision of the part is the mode of prevention generally adopted by the human surgeon, and it would seem to be most judicious practice. If the virus is not received into the circulation, but lies dormant in the wound for a considerable period, the disease cannot supervene if the inoculated part is destroyed.

The following is a strong case of the efficacy of excision:—

In September 1818, three persons were bitten by a dog at Knightsbridge. The wounds were excised immediately; but one of the sufferers, who had been bitten in his thigh, did not discover until the fourth day that the prepuce had been torn by the teeth of the animal: this also was excised; and they were all saved.

This operation, however, demands greater tact and skill than is sometimes supposed. It requires a determination fully to accomplish the desired object, for every portion of the wound with

* The physician Apollonius having been bitten by a rabid dog, induced another dog to lick the wound: "ut idem medicus esset qui vulneris auctor fuit."

which the tooth could have come in contact must be removed. This is often exceedingly difficult, on account of the situation and direction of the wound. The knife must not enter the wound, or it will be likely to be itself empoisoned, and then the mischief and the danger will be increased instead of removed. Dr. Measey was convinced of the possibility of this when he advised that "should the knife, by chance, enter the wound that had been made by the dog's tooth, the operation should be recommenced with a clean knife, otherwise the sound parts may become inoculated."

If the incision is made freely and properly round the wound, and does not penetrate into it, yet the blood will follow the knife, and a portion of it will enter into the wound inflicted by the dog, and will come in contact with the virus, and will probably be contaminated, and will then overflow the original wound, and will be received into the new incision, and will carry with it the seeds of disease and death; therefore it is that scarcely a year passes without some lamentable instances of the failure of excision. It occurs in the practice of the most eminent surgeons, and seems scarcely or not at all to impeach the skill of the operator.

Aware of this, there are very few human practitioners who do not use the caustic after the knife. Every portion of the new wound is submitted to its influence. They do not consider the patient to be safe without this second operation. Has the question never occurred to them, that, if the caustic is necessary to give security to the operation by excision, the knife might have been spared, and the caustic alone used?

The veterinary surgeon, when operating upon the horse, or cattle, or the dog, frequently has recourse to the actual cautery. I could excuse this practice, although I would not adopt it in superficial wounds; but I do not know the instrument that could be safely used in deeper ones. If it were sufficiently small to adapt itself to the tortuous course of many wounds, it would be cooled and inert before it could have destroyed the lower portions of them. If it were of sufficient substance long to retain the heat, it would make a large and fearful chasm, and probably interfere with the future usefulness of the animal.

The result of the cases in which the cautery has been used proves that, in too many instances, it is an inefficient application. I have referred to the appearance of a rabid dog in Park Lane a few years ago. He bit several horses before he could be destroyed. A caustic was applied to one of them, and the hot iron to the others. The first was saved. Almost the whole of the others were lost. A similar case occurred during the last spring.

The caustic was an efficacious preventive—the cautery was perfectly useless*.

What caustic, then, should be applied? Certainly not that to which the surgeon usually has recourse—a liquid one. Certainly not one that speedily deliquesces; for they are both unmanageable; and, what is a more important consideration, they may hold in solution and not decompose the poison, and thus inoculate the whole of the wound.

The caustic which, during many a year, I have been in the habit of using, and which has in no instance deceived me, is the *lunar caustic*. It is perfectly manageable, and, being sharpened to a point, it may be applied with certainty to every recess and sinuosity of the wound.

The potash and the nitric acid will destroy the substances with which they come in contact, but the combination of the caustic and the animal fibre will be a soft or semi-fluid mass. In this the virus is suspended, and with this it lies, or may be precipitated upon, the living fibre beneath. Then there is danger of re-inoculation, and it would seem that this fatal process is often accomplished.

The eschar formed by the lunar caustic is hard, dry, and insoluble. If the whole of the wound has been fairly exposed to its action, an insoluble compound of animal fibre and the metallic salt is produced, in which the virus is wrapped up, and from which it cannot be separated. In a short time the dead matter sloughs off, and the virus is thrown off with it.

Previous to applying the caustic it will sometimes be necessary to enlarge the wound, in order that every part may be fairly got at: and the eschar having sloughed off, it will always be prudent to apply the caustic a second time, but more slightly, in order to destroy any part that may not have received the full influence of the first operation, or that, by possibility, might have been inoculated during that operation.

Does any chemical combination take place? Is the virus neutralized by its union with the caustic? I cannot demonstrate this, but I have much reason to believe that some effect of the kind is produced.

It seemed to be a dangerous and a fearful course of practice that for many a year I was pursuing. The number of rabid dogs that were brought to me, and of persons bitten by rabid dogs

* "It is amusing to see the various disputations that have taken place with regard to the actual cautery. The kind of metal that should be employed was gravely debated, whether it should be gold or silver, or copper or iron: and when the cautery did not succeed with any of these, superstition whispered that, haply, the keys of the church might triumph, and those of St. Peter, and St. Hubert, and St. Roch, and a host of canonized worthies, were tried in turn."—*Murray on Hydrophobia*, p. 55.

that came to me, was very great. I may appeal to my house-pupils, now scattered through every part of the country, and few or none of whom escaped an occasional bite, with what confidence and with what success this preventive was used. I may challenge them all as to a single case of failure. When we were bitten, and it happened occasionally to us all, it gave us no kind of mental uneasiness. The caustic was applied;—I was usually, by my own and their choice, the operator—and there was an end of the matter. I have pleasing recollections with regard to them, and I think that they have not quite forgotten me. Some of the choicest of those reminiscences have reference to the confident yet careful manner in which we pursued what seemed to others a fearful course. Whatever else was forgotten, our stick of caustic was always our companion—our talisman. I believe that we saved the lives of many—many; and we now live to congratulate each other, not on our escape—for we had no fear of danger—but on our uniform success.

After the operation nothing stimulating should be applied. It is no unusual practice to keep the wound open during several months. This carries absurdity on the face of it. The virus begins to exert its fatal energy only when the nervous fibrils have attained a certain degree of irritability, and are become more than usually susceptible of impression. Then if a minute portion of the virus should perchance remain in the wound, by applying stimulating unguents to the part, we take the readiest means to rouse the nervous filaments to action, and we possibly produce that disease which would not otherwise have had existence*. Destroy the part, and then employ the mildest means to heal the wound.

Until what time may the knife or caustic be applied with a fair prospect of success? The sooner it is applied the better; but I would not hesitate to have recourse to it even after the constitution had become affected. It is related in the Medico-Chirurgical Annals of Altenburg (Sept. 1821) that two men were bitten by a rabid dog. One became hydrophobous, and died: the other had evident symptoms of hydrophobia a few days after-

* Mr. Smerdon, in the Medical and Physical Journal, March 1820, thus reasons: "All the morbid poisons that require to lie dormant a certain time before their effects are manifested, pass into the system through the medium of the absorbents (we somewhat differ from Mr. Smerdon here, but his reasoning is equally applicable to the nervous system), and, if the absorbents are excited, their action is increased. I am satisfied that even in a venereal sore the application of a caustic, instead of destroying the disease, causes its rapid extension. Then," asks he, "if the virus on a small venereal sore is rendered more active by the caustic, is it not highly probable that the same law holds good with respect to the poison of rabies?"

wards. A surgeon excised the bitten part, and the disease disappeared. After a period of six days the symptoms returned. The wound was examined. Considerable fungus was found sprouting from its bottom. This was extirpated. The hydrophobic symptoms were again removed, and the man did well. This is a most instructive case.

If we can trace tetanus in the horse to a prick or wound, we immediately excise or apply the cautery to the part; for we reason that, although the system is affected, still we may destroy that which keeps up and increases the morbid action. I do not think that this point is sufficiently attended to.

Amputation above the part which a rabid dog had bitten was performed at one of our own hospitals, on a poor fellow labouring under hydrophobia. The man died, but I do fully exculpate the surgeon who advised and performed the operation*.

One lecture more will complete this all-important question. The knife and the caustic are the grand preventives; and the surgeon must decide for himself with respect to their comparative value. I am not presumptuous enough to condemn the use of the scalpel—I often used it fairly to get at the wound; but I honestly confess that I prefer the caustic. I hope that at this period I may do so without being exposed to the gratuitous abuse of former days. I have had seven-and-twenty years' experience of its power on myself and others. I confidently appeal to my pupils everywhere, and many of them the ornaments of their profession; and I might also appeal to many of the stars of the medical profession, who, having tested its power, now place their chief dependence upon it.

* That gentleman published a defence of the operation, which did much credit to his talent and his feelings. On one part of his argument I must, however, be allowed to animadvert. He performed the operation after the matter had been absorbed—after the whole constitution had been affected, and thirty hours after the disease had been manifestly developed; and I offer him my humble meed of praise for the bold and judicious determination. But, says he, "the result of the experiment must serve to convince everybody that the notion of the rabid matter being retained in the part up to the time of the breaking out of the hydrophobic symptoms is altogether fallacious, and undeserving of further attention."

Could not this gentleman's excellent good sense have instructed him that his experiment had nothing to do with the question of 'the retainment of the virus in the bitten part until the hydrophobic symptoms had developed themselves,' because he did not operate until they had developed themselves, and *the virus, in every one's opinion, had been absorbed, if it ever is?*

ON PUERPERAL FEVER IN COWS.

By Mr. E. A. Friend, *Walsall.*

Dear Sir,

I have before this felt an inclination to make a remark or two on some of the observations which were made in the course of a debate of the Veterinary Medical Association on Puerperal Fever in Cows; but having previously occupied your pages to a considerable extent on the same subject, I have hitherto forborne; but your appeal to me in the last Veterinarian respecting the queries of Veterinarius on some points of treatment in this disease, prevents the possibility of my supposing that I shall be considered to intrude by so doing; at any rate it carries its own excuse with it.

I am more than ever convinced that, if we are to progress as we ought to do in that branch of veterinary science which relates to cattle in particular, we must learn to call diseases by their proper names. The whole of the debate before alluded to is a striking proof of the correctness of this opinion. That there are different degrees of intensity of disease in these cases under different circumstances, and in different localities, I am ready to admit; and this it is, perhaps, that has led partly to a discrepancy of opinion amongst professional men that, without accounting for it in this way, is truly surprising, and, even bearing this in mind, I must confess I felt astonished at many of the remarks made upon it in that debate. Some of the gentlemen who spoke on that occasion must have been most fortunate indeed in the cases of this kind submitted to their care, if it be not as I have before said, that we owe this confusion to our defective nomenclature of diseases. For instance, Mr. Cheetham speaks of cases as those of puerperal fever, where the cow would not rise simply from disinclination, and the post-mortem appearances of such as died presented chiefly inflammation of the bowels, and where such as recovered did so under a system of treatment based on the knowledge of this fact, and properly qualified to meet such an exigency. Now I consider that these cases immediately following parturition may have just as good a right to be called puerperal fever as the same disease which Veterinarius calls by the same name, or, perhaps, more so; but they are decidedly different cases altogether. The circumstance of the cow being down simply, and this being dependent only on the will, gives nothing of the character of that disease which I contemplate when I use the term puerperal fever. I have never yet met with an instance in which I have failed to recover the animal if they have risen at all after my attendance. These are distinct diseases, and

ought to be called by different names; and then there would not be such a variance in our opinions as to the proper means to be adopted.

Mr. Cheetham might well say that the motor nerves could not be seriously affected in these cases. I say the same. He speaks also of not bleeding if a few days had elapsed, and then going on cautiously with purgatives, &c. Why, in such cases as I call puerperal fever (such, for instance, as those recorded by Veterinarius in your last) the patient is either dead or safe by that time. Now, how can we possibly expect to agree in opinion as to the cause, symptoms, or treatment of any specific disease when we call affections differing so essentially as those of Mr. Cheetham and Veterinarius, or Mr. Staveley, by the same name?

Mr. Dauber in his essay has endeavoured to reconcile and blend together a variety of notions as to cause and effect, and identify them by culling an idea from one and an opinion from another of those who have preceded him in publicly stating their views on this subject, and he has failed in his attempt; and this will always be the case where so many different affections are called by the same name, simply because they occur at the same period. Thus, in his detail of causes, he states that cows travelling from one market or fair to another are seldom its victims; another tells you, during the same debate, that such are the most commonly so, a direct contradiction in terms; and yet the peculiar cases passing in review before the mind of each, which induced these contradictory remarks, might form some good warranty for their respective opinions.

The fact is, Sir, that in no situations and under no circumstances are they exempt from this disease. It is an affection of that part of the system with which we are least of all acquainted. We know but little, practically, of the spinal columns; we do not know how effectually to detect latent or slowly progressing disease of any part of them, or we neglect them when detected; and it is only at the eleventh hour, when the functions of life begin bit by bit to be suspended, that we suspect what is the real state of the case, or set to work seriously to repair the injury.

Before I finish this paper I will state what I have no doubt is the real origin of this disease; an opinion formed from continued observation, and not at all at variance with time, condition, circumstances, or locality, as all opinions I have hitherto seen as to its cause have been in some degree. One tells you it is from action—another from inaction—another from a particular sort of feeding—another from plethora—another has seen as many cases where there was great want of condition; and the advocates for these different opinions are so nearly equal (with

the exception of one which I shall notice at greater length), as to neutralize their value entirely, and prevent the possibility of any one being received as standard. But there is another thing which militates still more strongly against one and all of these opinions than the simple circumstance of their being contradictory,—it is the stubborn fact, that it is not a sweeping disease. Out of great numbers constantly exposed to any of the causes abovenamed, few are its victims. A farmer generally calves a great many cows for one that has puerperal fever; and I believe that this number may be much decreased by an attention to what I have hereafter to recommend.

Plethora is the favourite cause assigned; but I am quite convinced that it has nothing whatever to do with the disease originally. At the crisis, indeed, it has much to do with it, disposing to inflammatory action of vital parts—adding to the weight to be sustained without a proportionate increase of muscular strength—loading and impeding the action of the muscles themselves, and rendering the nerves of motion still more obtuse. Out of seven cases that have occurred in my own practice during the last few months only one was at all in a high state of condition, and this case recovered the most readily of all; and I think a very good reason may be assigned for it. Look at the excellent remarks made by Mr. Staveley. In speaking of two different places in which he had practised, where he saw a good deal of this disease, he tells us that the cows were larger, heavier, and in better condition at Bradford than at Garstang; and yet the disease shewed itself in its mildest form at Bradford, and was more manageable. Now for the reason:—It is well known that cows have a great dread of falling under these circumstances, most probably from being aware of their succeeding inability to rise. There would be less natural power in the fat heavy cow to resist this; and I have no doubt that many cases of this kind that terminate favourably, do so simply from their being detected (from this cause) at an earlier stage of this peculiar disease of the nervous system. The first intimation that the veterinary surgeon usually receives is after the cow is helplessly down—at least such has been the case in my practice. It has been with me a very rare occurrence, ever to have been called in previous to this. If, then, owing to the circumstances just mentioned, we receive a few hours' earlier notice than we otherwise should do, we gain a great deal; and though this very state of heaviness and plethora may and does induce to inflammation, yet this will not carry them off half so rapidly as the disease of the nervous system.

Look at the first case, particularly, recorded by Veterinarius, as

a proof of this. Here was a decided case of death from defect of nervous energy, clearly traced to disease of the spinal columns, and, no doubt, involving the whole cerebral mass. A melancholy but highly instructive lesson may be learnt from a case like this; and, with the due attention which ought to be paid to living symptoms and post-mortem appearances, it is scarcely possible to mistake this for any other than simple disease of the nervous system. What are all the symptoms before death? The effect,—loss of muscular power: the cause,—want of nervous energy, commencing, so far as observation is generally concerned, with shifting the feet, trembling and staggering when in motion; this soon followed by total loss of power in the extremities to sustain the animal, and she falls;—the debility extends to the throat, the eyes, the muscles of respiration and deglutition, and, last of all, the heart participates in this want of power, and death is the immediate consequence. The post-mortem appearances fully bear out this view of the case. The animal now under consideration (Case I, Veterinarius) was in very high condition, and yet there was no appearance of inflammation: every thing internally points to the same cause, the same effect. No power in the gall-bladder to expel its contents—no power in the stomachs to carry on the processes of rumination or digestion. It was not a breaking up of the muscular part of the constitution, like that produced by slow decay or rapid inflammatory action; it was simply a cessation of vitality from loss of power in those muscles whose healthy action constitutes life. There was, in fact, no disease whatever but of the nervous system. I cannot pass over these post-mortem details without throwing out a hint as to the necessity of much thought and extreme caution in conducting these examinations. In the subject before us many, without due consideration, would at once say, Here was a case of inflamed lungs. In the ordinary acceptation of the term there was no such thing: the congestion of blood in the lungs was from the same cause as the stoppage of food in the stomach—want of power in the muscles respectively concerned to carry forward their contents. It was the right side of the heart acting longer than the left. It has happened to me on more than one occasion to be told, after death, that I had mistaken the case; that the animal had died from inflamed lungs; and that there was no disease elsewhere. You would not call this same congestion in the lungs after hanging or drowning, inflamed lungs; neither is it so here: and though it is sometimes extremely difficult to make the owners of such animals understand the *modus operandi* of all this, yet I apprehend that it will be clear enough to the conception of every veterinary surgeon.

I must throw myself upon the indulgence of your readers. Having previously written a good deal on this subject, I find it difficult to say all I wish to do on this occasion with a chance of interesting them; but I have thought it necessary distinctly to state, and to endeavour briefly to prove from the cases of Veterinarius himself, what I consider the origin and effects of this disease, in order that I may shew a reason for the practice I shall recommend in answer to his queries. It will be quite clear to him, then, that I consider the cause is disease of the nervous system—the effect, loss of power in the muscular system: and he will find that I have precisely the same opinion of the difficulties we have to contend with in these extreme cases which he has. He speaks with surprise (and I join him in the same expression) of the great *nonchalance* with which some gentlemen in the course of debate recommend you to empty the stomachs and intestines with common physic. Every time they meet with cases like those described by him they will find the utter inefficiency of this mode of treatment.

The practice which I recommend is, to employ very strong counter-irritants in order to combat with the cause, and to administer powerful stimulants and purgatives to counteract the effects. And when we recollect what can be effected, even after a cessation of life, on the nerves, and through them on the muscular system (as by the application of galvanism, and the means resorted to in order to restore drowned persons, &c.), surely we may conclude that this is a reasonable mode of treatment. Now, let me be perfectly understood as to my opinion of stimulants, as applied to the cow when in this state. As to two or three drachms of ginger and gentian, I consider these as next to no stimulants at all, and not a greater quantity than ought to be given with every common dose of physic to preserve the tone of the stomachs. I employ cantharides and carbonate of ammonia directly for this purpose, and spts. tereb. and æth. nit. as adjuvants, and also to act powerfully upon the kidneys. I now usually give for the first dose sulph. mag. ℔i, pulv. sem. croton ℈ii, pulv. canth. twenty grains, carbonate of ammonia ʒi, ginger and gentian, āā ℥i. I afterwards give the same sort of purgative medicines, in quantities according to the case, every three hours till an effect is produced; with the addition, after the first dose, to the purgatives, of fifteen grains canth., ʒi carb. ammon., and ginger and gentian āā ʒiv, instead of the quantities first prescribed. Between these times I occasionally give spts. tereb. and æth. nit. āā ℥ii, and ant. tart. ʒi, in sweetened gruel. This is the internal treatment, with occasional variations which can scarcely be detailed. As an external stimulant, I employ strong liquid blister, made more powerful by the addition

of ʒii ant. tart. to every six ounces. I use this along the whole course of the back very extensively, and also on the neck, beginning directly behind the ears. One effect this mode of treatment decidedly has, and, judging from analogy, a valuable one. From the irritability it produces, it occasions powerful efforts in the animal to keep up the action of the muscles; and if we may reason from the practice of surgeons, who, after their patients have swallowed opiate poisons, endeavour by rude and forcible means to produce the same effects, and often with the happiest results, we have a right to consider this as some quota in the ultimate amount of success.

With regard to the question of Veterinarius, as to using the actual cautery to the abdomen, I beg to reply, that my practice has been confined to an endeavour to apply the remedy as near to the origin of the disease as possible. With this view it is that I try to produce external inflammation as closely as I can to the neighbourhood where the nerves are given off that I consider most affected. I do not see any particular objection, however, to the practice, though I think that an application to the spine might be more advisable.

I am somewhat astonished at the neglect which has generally een paid to affections of the spinal columns by all who have written on cattle practice. Every one knows the fact, that the spine participates in many diseases, if it is not itself, as I strongly suspect in various instances, the original seat of disease. Nothing is more common than to apply the thumb and finger along the spine to detect this affection, and yet when discovered by the pressure actually to exist, no direct application is made to remove it. It is my opinion, that if this were done at once, when detected in the way abovementioned, puerperal fever would not take place so often as it now does. This is a very important point in practice, and it behoves us to turn our attention to it. I have no doubt whatever myself, that the great number of cases of puerperal fever arise from chronic disease of some part of the cerebral system, fully developed, and brought to a crisis by peculiar circumstances connected with parturition; and if we are to seek for a preventive, we must find out an early remedy for these incipient spinal affections. We have much to learn yet respecting diseases of the nervous system; and it is only by patiently and carefully investigating all the circumstances connected with these cases, so imperfectly understood, that we are likely to arrive at just conclusions respecting them, or the adoption of a correct mode of practice. It is very possible, and very probable too, for indigestion, hoose, tightness of the hide, staring coat, and a host of other evils, to have their origin in disease of the nervous sys-

tem; for as no action in the whole animal economy can take place but under the influence of nervous direction, what is likely to ensue but derangement in these functions, when the mainsprings, the directors themselves, are diseased? And if we were oftener to look at that as the cause, which we are too apt to consider as the effect, I believe that we should be oftener correct than we are.

With regard to bleeding, I am regulated entirely by the amount of inflammatory action which may exist in connexion with it; but as to the disease itself, unconnected with this accidental inflammation, I consider that venesection is highly injurious. This view of the case will reconcile much of the contradiction with reference to bleeding which took place at the debate on the subject.

PURULENT DISCHARGE FROM THE NOSTRILS OF A MARE.

Communicated by Mr. James Horsburgh, *Dalkeith, N.B.*

About two years ago I was sent for to examine a two-year old filly, the property of Mr. Blakie, a farmer, at Murrall, near Stow (about twenty miles from this place).

I found her with a discharge from the right nostril, to such an extent as almost to threaten suffocation. Her respiration could be heard at a considerable distance. The place where she stood was literally smeared with matter of the colour and consistence of thick cream. The discharge had continued for rather more than a year, and had commenced shortly after she had strangles. The os unguis, malar, and superior maxillary bones were considerably enlarged, giving to the eye a sunken appearance. The submaxillary gland was also a little enlarged, but quite detached from the bone. There was no appearance of ulceration on the septum, and the filly in other respects appeared perfectly healthy. I need not say that glanders were suspected; but on examination I did not think that formidable disease had as yet taken place. Percussion gave indication of matter in the frontal sinus, and by the appearance of the maxillary and other bones, it was evident that disease was going on in their cavities to a considerable extent. Not having a trephine at hand, I gave her a dose of physic, directing her, at the same time, to be kept by herself (as a safe precaution) and tried inoculation with the matter on several places of her own neck.

About two days after I visited her again: the wounds on the neck were healed without any bad results. I then had her cast and properly secured. On proceeding to open the maxillary cavities with a trephine of an inch and a quarter diameter at the inferior point of the spine of the superior maxillary bone, the instrument was much impeded in its operation by the turbinated bones, whose cavities were completely filled with matter. I next opened the frontal sinus by a perforation at the inferior point: the piece of bone came neatly out with the instrument, the internal periosteum remaining entire, and on perforating which about a quarter of a pint of thick pus came away. It was even thicker than that discharged from the nose. I next made an opening to the frontal sinus, from the perforation in the superior maxillary, by directing an instrument upwards and backwards, in order to secure a depending orifice for the proper evacuation of the matter. I then syringed the cavities well out, and let the filly get up.

The after-treatment was as follows:—The wounds were well syringed with soap and warm water, then with water without soap; and after that a little of a lotion, composed of a drachm each of acetate of lead and sulphate of zinc in a quart of water, was injected into the parts once a day.

Internally, I gave the oxymuriate of mercury in doses of gr. x, increased to gr. xx every other day for about two weeks; I then gave the increased dose every third day for nearly two months. It was now discontinued for a considerable time, and then resumed for another month. Twice I had to enlarge the openings at distant periods. There was never the least discharge from the nose after the operation. It was about twelve months before I suffered the lower opening to close.

Being at Murrall with three of Mr. Dick's young men as assistants in castrating several colts, I had an opportunity of examining the mare about a month ago. She had been a year at work, and is quite free from disease. The cheek is now but little enlarged; the perforations are quite closed up.

NON-MASTICATION OF THE FOOD, A CASE OF ENTERITIS, CHRONIC DISEASE OF OMENTUM AND LIVER, AND LACERATION OF THE RECTUM.

By Mr. J. B. Simonds, *of Twickenham.*

An aged bay horse, the property of Charles Stanborough, Esq., of Isleworth, was yesterday, June the 28th, driven to Windsor. He performed the journey in his usual excellent style.

He was a valuable, well-bred animal, and always kept in superior condition. Immediately after returning, and during the time the lad employed as groom was taking off the harness, he was apparently attacked with acute abdominal pain: this was about 1 A. M.

As Mr. Stanborough's stables are situated nearly a quarter of a mile from his residence, and that gentleman had not gone into them after his return, he was unaware of the illness of his favourite, and, I am sorry to add, was not apprised of it until several hours afterwards. The boy remained with the horse during the subsequent part of what may be termed night, the pain continuing, and the poor animal rolling about his box until about 6 A. M., when some of the men coming on the premises, sent to a farrier close by, who attended the case. Immediately upon Mr. S. being informed of what had happened he came promptly to my infirmary, and I proceeded to his stables, after having dispensed such medicines as I thought necessary.

I found my patient in a comfortable loose box, with the farrier and others in attendance; but it was too evident, from the first glance I had of him when my eye caught his, that our efforts to save him would be of no avail.

That I might not be considered as giving a hasty and not well-considered opinion, I examined our patient more closely. The extremities were deathy cold—profuse perspiration was issuing from every pore—the mouth was clammy, and firmly closed—the conjunctival and Schneiderian membranes were of a scarlet colour—the pulse was not to be numbered at the jaw, but was about 120 in a minute when carefully examined at the side—the eye was expressive of the greatest suffering, speaking, in fact, the language of despair, and telling me I had come too late. He would rise, look to his poor agonizing sides, and,* *reasoning within himself, paw the litter under his abdomen until it was raised so as nearly to touch it,* and then with the greatest care he would drop himself upon his bed; and when down he would soon throw himself on his side, raise his head, and turn it to the seat of his principal torture. These were the symptoms, and I at once stated my inability to give relief.

* He was evidently constructing the softest pillow on which to rest his tortured frame, and how he should best avoid the agony which the slightest concussion would produce. It was a plain proof to me, that the faculty of reason is extended to these inferior animals—our poor, neglected, ill-used patients; and which proud and presumptuous man considers as ordained to be his slaves. Man, vain man, contemplate the animal creation with which thou art surrounded, and many a lesson, and many a reproof wilt thou receive! With all thy mental powers, thou art not so superior as thou wouldst be thought.

At this stage of the business, the farrier, as if anxious to agree with my opinion upon the nature and termination of the disease, stated that he had observed some blood to have come from the rectum, following an injection he had given. "Blood!" I exclaimed, "blood!!"—"Yes, sir." "Are you sure?" I repeated.—"Look, here is some of it," answered he, pointing to the floor. "Oh! Oh! you gave two injections, did you? Did any blood come away with the first?"—"No." "You have not back-raked him, have you?"—"Yes." "Well, I will see the cause of this," stooping to examine the rectum; and what did I find? why, a laceration in that intestine, through which my hand could pass. "There may well have been blood," said I; "why, the rectum is *torn*."

Withdrawing my hand, and addressing the owner, I begged to have him immediately destroyed, which was promptly conceded; and the poor animal was led trembling from the box, to receive the last act of kindness that could now be performed.

I remained to make a post-mortem examination, which was as follows:—On removing the abdominal muscles, the peritoneum lining them was found to be inflamed through its whole extent; the intestinal portion was most highly injected, approaching a scarlet colour, and deeper in some places than others. On turning these aside the omentum was found very much thickened, of a brown colour, having evidently been, as well as the liver, affected with chronic disease.

Mr. S—— afterwards informed me that this horse, about two years ago, fell away very much in condition. He continued to feed well, and presented to the owner no other appearance of disease than evident wasting. A run at grass was given to him, and he shortly regained his usual condition, strength, and liveliness. When again taken to his former work, he would frequently, after being driven and pulled up, stand as if preparing to void urine. This was not much regarded; but it seems from the above abnormal appearances to have been connected with the chronic affection of the omentum and liver.

The stomach was next examined; it was distended partly with gas, but principally with food, which, on opening this viscus, was found to consist of unmasticated oats and beans. It is worthy of note that he had taken no food since the afternoon of the previous day.

Extending the examination along the intestinal tube, the small intestines, but particularly the ileum, here and there contained a quantity of the same unmasticated, undigested, unassimilated food, especially at its further extremity, or where it terminates in the colon. At this part was the principal obstruction; for here it

was distended to double its size, and crammed completely full with food. I have little doubt that this accumulation was the cause of the attack, the peristaltic motion being unable to drive this quantity onwards, and whence would arise increased determination of blood to these viscera. The exertion of a journey being superadded, acute inflammation would assuredly be produced, the case not being promptly or properly attended to. The other coats, of the intestines, viz. the muscular and villous, were, as well as the peritoneal, participating in the general inflammation.

I was now induced to dissect out and examine the rectum: I found it to be lacerated as before described, evidently produced by the foolish anxiety which prevails to remove the contents of that intestine by what is denominated back-raking. This operation may be and is necessary in some cases, but they occur comparatively seldom. When this operation is deemed advisable, the veterinary surgeon should not use force in the accomplishment of his object. I may add that, in the course of my practice, I have seen several fatal cases arising from this procedure, and have no doubt that hundreds of horses have been so killed. Nothing can excuse that disgusting practice of pushing the hand and arm continually up horses' rectums, under the idea of "getting a passage," as it is called, which I have seen so frequently adopted by practitioners of the old school, when attending cases of spasmodic colic, &c. In the present instance, there is little doubt that the farrier was more ignorant than his poor patient of the mischief which he had done, and the pain and misery that he had inflicted; and upon my mentioning it to him, he said he was not aware he had done it: but his was a large hand, and the horse forced much against him.

I have sent you this case, as there appears to me to be several valuable facts connected with it; and should you consider it worthy of a place in your straightforward, unflinching, honest, and excellent Journal, it is at your service.

CONGENITAL BLINDNESS IN A FOAL.

By Mr. G. Baker, *Reigate.*

The following case occurred in the course of my practice. I have never met with a similar one, nor has my father-in-law, Mr. Edward Turner, in the whole course of his long professional career. I therefore forward the particulars of it to you.

About a fortnight ago I was requested to see a foal, a few days

old, belonging to Mr. Joseph Nash, of Reigate, which he believed to have some affection of the head, as it seemed, even from its birth, totally unconscious of its near approach to any object, although he considered it to have good eyes.

On entering the stable, I found the foal apparently healthy; but when excited to motion, it blundered against any source of obstruction which might be in its way; running its head against the wall or the mare's legs, in such a way as to convince me that it was totally blind. On examining the pupil of each eye, it was greatly dilated and motionless—the humours of the eye were clear, and of a blueish tint. The cornea and sclerotic tunic had a healthy appearance. There were no adhesions of the iris, no symptom of cataract, nor any undue vascular action. After a few days, being convinced that the foal would never have sight, and being a nag foal, I ordered him to be destroyed, and sought, in a post-mortem examination, the cause of this unusual event.

The substance of the brain appeared healthy throughout. The ventricles contained no more than a proper and natural quantity of fluid. Above the tubercula quadrigemina there was a small mass of the size and shape of a lentil, free and unattached. On tracing the optic nerve in its passage from the base of the brain, it was found in a complete state of atrophy, there being hardly any nervous substance within the neurilema. It presented a remarkable contrast to the several branches of the fifth, which were of their usual size and condition. It is to be regretted that this most important organ, the eye of the horse, affecting both his usefulness and value so materially, should so frequently be the subject of disease over which our curative means avail so little.

INVERSION OF THE BLADDER IN A SOW.

By Mr. Edmund Neale, *of Burbage.*

On the 21st of last February a sow, belonging to Mr. Joseph Eagle, of Burbage, littered in the morning, and brought ten pigs, apparently without any difficulty; but, immediately afterwards, something came out (to use the owner's own words) exactly resembling the bladder, and which appeared to be about half full. Finding that it did not come away, he became alarmed, and sent for a pig butcher, who said it was the womb, and that it must be put back; he accordingly put it back, or attempted to

do so, and concluded by passing two or three stitches of small twine across the labia. She was then left.

In about a fortnight afterwards, hearing of the case, I called to see her, having frequently had cows with the vagina considerably protruded. Her owner willingly shewed her to me. She was in a stye with her little ones, which appeared in excellent condition. She was lying down, but, upon speaking to her, she got up, and there appeared what I thought to be a vaginal protrusion, about the size of a man's fist, and in a sloughing condition. I proposed to examine her, but the owner said he would have nothing more done to her, and that she should take her chance. The urine was continually dropping from her. I ordered a decoction of oak bark, and left her.

On the 14th of June she was killed for bacon, weighing 160lb. Upon opening her, the uterus was perfectly healthy, the vagina as clean as possible, and the tumour reduced by sloughing to the size of a lemon; the bladder was completely gone, nor was there the slightest trace of it left. The kidneys were full of a white purulent matter, about the consistence of thick cream. The uterus led directly from the kidneys to the protruded part, at the inside of which, and just below the anus, was a formation of matter about the size of a hen's egg. There was not the slightest appearance of inflammation in any of the surrounding parts. She had bred up all her ten pigs, and was in very fair condition when she was killed.

CONTRACTION THE EFFECT AND NOT THE CAUSE OF DISEASE.

By Mr. E. Wheeler, *Isle of Wight.*

I see in your periodical that the Veterinary Association had a discussion last year on the subjects of contraction and the navicular disease; and many of the members thought, and I believe it is generally thought and taught, that contraction is a disease, and not the effect of disease. I must differ from those gentlemen. Mr. C. Spooner, in my opinion, is the only one that has hit the right nail on the head. I quite agree with him when he says (in the Abstract of the Association, p. 225, in the August No. 1837) "it was brought about by inordinate work, concussion, and the state of the foot consequent on the application of the shoe, and that the effect is taken for the disease."

I cannot think that we ever have a contracted foot without some other primary disease in the foot. I should say that a dis-

eased coronet might produce a derangement of the fibres of the horn, and thus give pressure on the sensitive parts, so as to produce pain and lameness;—I say it might be the case, though I have never seen one; but the real contraction, as it is called, that is, the contraction alluded to by the Association at the time abovementioned, I believe to be not a disease, or the cause of pain or lameness, but the effect of a disease in the foot, perhaps of the navicular bone, or of its neighbouring parts; and I find in my little practice that the navicular disease is generally brought on by inordinate work, and never by contraction. I have watched the disease many times from its commencement: in fact, I have undesignedly produced it myself in several horses by hard work.

I had once a little bay mare, too young and light for my weight, which I rode one day after the hounds. On the next day I found her lame in one of her fore feet. She pointed her foot, and it was very hot. She remained lame for some time; but soon after she was first attacked with this lameness—perhaps in a few weeks—I began to see a difference in the size of her feet. The diseased foot became contracted, and the pastern more perpendicular.

Another brown mare I hunted hard, and, after a severe hunt on heavy land, found her, on the next morning, diseased in both fore feet. She walked very tenderly and upright on her pasterns, as if shy of throwing her weight on the back parts of her feet. She had a beautiful colt's foot at the time, but remained lame for twelve months or more, one foot rather worse than the other. Very soon after the attack I began to see that both feet were contracting, which I considered to be for want of pressure on the heels, which the animal dared not to give on account of the pain around the navicular bone. The lamest foot contracted most.

Horses' feet will sometimes contract gradually without any preceding lameness. They are generally horses that are ridden or driven fast on hard roads day after day. Their feet are only tender at first, and the thoughtless rider or driver does not regard this as worth his notice: the navicular disease steals on gradually. The horse becomes upright in his pasterns, in consequence of tenderness of the navicular joint, and contraction follows for want of pressure on the posterior part of the foot. The poor animal continues to be driven until he becomes a complete cripple.

I do not mean to say that the navicular disease is always the cause of contraction, for I once had a fine chestnut mare brought to me with a message that she was lame with contraction of the foot on one side. I examined her, and found on the contracted side ossification of the lateral cartilage. This was the cause of the quarter contracting so much that no weight could be thrown

on the part on account of the pain. I performed the operation of neurotomy above the fetlock, and she was immediately free from lameness, and hunted the two last seasons, and the shape of her foot is much improved.

I have also known a horse's foot punctured through to the navicular joint, and a chronic disease set up, contraction following.

Another thing proves that contraction is not a disease or cause of pain, that is, dividing the nerves of contracted feet below the fetlocks. We find that this removes the lameness; but were pressure of the hoof the cause of pain, it would not have this effect, because those parts which are contracted receive most of their feeling by means of the nervous branch given off at the fetlock, and which goes to supply the parts in the neighbourhood of the lateral cartilage: consequently, by dividing the nerve below the fetlock, the feeling of the contracted portion is only partly taken off: but the intero-posterior part of the foot is deprived of its feeling, and I think this is where the primary disease generally is. I have unnerved a great many contracted feet below the fetlock, and all with a good effect.

In the country the smiths are blamed for contracting the feet by bad shoeing, but I blame the rider and driver in nine cases out of ten.

The thrush is another disease often present in contracted feet, caused by the navicular or some other internal disease. If I have a horse brought to me with the thrush, I always look for some other disease, thinking that it is the inflammatory heat and lack of pressure that destroys the healthy secretion of the horny frog. It might sometimes be produced by filth, but very seldom.

As to horses with light fore quarters, we certainly do find more of them with contracted feet than any other; and the reason is this,—the bones and tendons are long in proportion to their size and strength, and they are generally the most high-spirited animals; consequently the power of leverage, backed by spirit, is too strong for the natural substance of such horses, and some parts must give way. We also find this kind of horse strained more in his fetlocks and back tendons;—in fact, if hardly worked, he is always giving way somewhere, and the most likely places to go first are the fetlock and navicular joints.

As for treatment in these cases I shall say but little about it now. We are taught to give contracted feet pressure on the heels, but I think we ought to endeavour to cure the internal disease of the foot first.

I ought to have mentioned Mr. Turner's name as the discoverer of the nature and cause of the navicular disease. A most valuable discovery it was to the veterinary practitioner.

CASES OF APOPLEXY, HEMIPLEGIA, AND PARAPLEGIA.

By Mr. Storry, *of Pickering.*

On the 23d of April last, I was requested to attend a filly belonging to Mr. Seamer, of Normanby, near Pickering. She had lain in a ditch all the previous night. On examining her I found that she was in a lethargic state, which caused her to sleep for hours together. I bled her, gave aperient medicines and antispasmodics, and inserted a rowel in the chest.

24*th.*—I bled her again, gave sedatives and restoratives; but with little hope of saving her.

I did not attend on the 25th, and Mr. Seamer finding the filly no better, sent for a neighbouring practitioner, who commenced his operations by applying sheep skins to the parts affected. He spoke pretty confidently of effecting a cure by such means, and promised to call again on the next day; but the filly died, and was sent to the dogs before his next day's visit.

This brought to my mind a few similar cases in which I was professionally engaged some years ago, and which, on account of the novelty of the ideas, opinions, and treatment of some practitioners in this neighbourhood, I beg to transcribe from my case book, as they occurred at different periods.

In the month of March 1824, Mr. George Parkinson, of Pickering, found his valuable stallion horse one morning lying in the stable in a very dangerous state. He consulted a neighbouring farrier on the nature of the complaint, who told him that the horse had broken his back in consequence of falling backwards against a corner of the wall, and gave them no hopes of recovery. He attended again in the evening: the horse was still down. He told Mr. P. that he might let him lie, and not disturb him, for he would soon be *dead.*

Mr. Parkinson then sent for me. I attended, and found the horse sitting on his haunches, with his fore legs distended, and his eyes fixed on the rack. I immediately detracted about seven quarts of blood, after which he jumped upon his feet; but having lain so long in such a paralyzed or apoplectic state, he seemed much convulsed, and was seized with a violent tremor all over him. I administered an antispasmodic medicine, and he soon began to eat and drink such things as I ordered for him. My treatment of him afterwards consisted of aperients, with the insersion of setons, rowels, charges on the back, &c. by which means a cure was effected, and the horse

travelled several seasons in this neighbourhood, and was then sold.

In the same year, Mr. Thomas Keddy had a horse that fell down in a fit of hemiplegia. I was called to attend him. I bled him immediately, and we got him up. He was paralyzed on one side, and could only walk a few paces at a time, so that it was with great difficulty we got him home, a distance of about a quarter of a mile. I gave him antispasmodic medicine, which relieved the convulsive and tremulous motions; and he stood up, ate a little mash, and appeared somewhat better; yet I was convinced the case was hopeless.

On the next morning he was down, and could not be raised: I told Mr. Keddy that his horse would die, and that it was useless to put him to any more expense about him. The owner was not satisfied with this plain dealing, and got another person to examine him, who told him he could perform a cure, and commenced with bleeding, blistering, and medicine; but he found the horse dead on his second visit.

In the year 1833, Mr. Thomas Peirson, solicitor, of Pickering, sent for me to bleed his horse, and to give him a dose of physic. He told me the horse went very dull and sluggish on the road. The animal had been out on the morning that I attended him, and, on coming into the stable, had staggered forward, and fallen. I found on examination that it was an attack of paralysis, the neck being bent or curved very much. I bled him, and gave a dose of physic, but I had no hope of a cure, and threw out a hint to that effect. I then set off to attend some other patients, and Mr. Peirson, being uneasy about his horse, sent for another person in my absence. When I returned, I found the horse lying on the ground, and a sack of corn placed across his neck. I inquired the reason of this strange manœuvre, and was told that it was done for the purpose of setting the neck straight, as the farrier supposed that he had bent it by the fall. Other means had also been resorted to, and great confidence expressed that the horse would soon be better, and fit to turn out to grass, as the complaint was only a severe attack of rheumatism. Numberless expedients were now resorted to, such as raising him up with slings occasionally, and keeping him in that position for awhile, and then letting him down again; applying sheep skins and counter-irritants, and, all the while, giving full assurance that the horse was getting better, and would soon go out to grass—nay, the day was actually fixed for turning him out: but, to their utter astonishment, the horse died before the appointed day had arrived.

These are a few out of many similar cases that I could furnish

from my case book, but I shall at present forbear, assuring you that my only motive in this communication is for the purpose of giving and receiving mutual instruction in difficult cases, so that the profession be not disgraced by such inconsistent treatment as the above: at least that they shall be left without excuse if they continue to follow it after being furnished with the means of amending such treatment.

ON INSTINCT.

By Mr. W. F. Karkeek, *of Truro.*

Delivered before the Truro Scientific Institution, in April 1858.

[Concluded from page 351.]

I will now direct your attention to animals occupying links in the great chain, of a more complicated structure than any we have hitherto noticed,—the dog species. This serviceable animal has, by all naturalists, been assigned a distinguished link in Nature's chain; and whatever obscurity may seem to hang around his direct origin, yet, were we enabled satisfactorily to trace his history even as a cultivated animal, we should probably be carried back to the earliest periods of human association. A reverend author fancifully observes*, "that the dog was probably the next object, *after woman*, that shared the attention, or espoused the cause of mankind." Now there cannot be a doubt that there are innumerable actions performed by dogs that cannot possibly be referred to instinct only. He would have proved but an indifferent subject for cultivation if his natural instinct had at all resembled the wolf, the fox, or the hyæna, and the patience of the experimentalist would have been exhausted by innumerable failures before he could have succeeded in obtaining an imperfect result. There is a great deal of obscurity respecting the early history of the dog, and most of our distinguished naturalists are at variance with regard to it; nevertheless, justly appreciating his importance, I believe that it is a general opinion now that he has a claim to a pure originality of formation. It certainly appears at first view strange that so many varieties should have originated from one stock; yet, when we consider the powerful agencies of climate, habit, food, and domestication, we need not feel astonished at the number and variety of Nature's works. Domestication has not only changed the external appearances of animals, but their very instincts have been considerably modified. All the numerous varieties of cattle, of

* Lascelles on Sporting.

sheep, of horses, of dogs, of poultry, and of all other animals reared as food, or for any domesticated purpose, have sprung from a few wild and unattractive species, and have been made what they are, in a great degree, by the intervention of man. Nor have the transformations which he has produced among animals been less wonderful than those among vegetables. By his superior intelligence, the sour and forbidding crab has been transformed into the rich and grateful pippin, the harsh and astringent sloe of the woods into the delicious plum, and the coarse and bitter sea-side brassica into the nutritious and grateful cauliflower.

Now, it is undoubtedly true that the various habits and qualities which the different breeds possess are acquired and have been transmitted to their offspring. The dogs that have been discovered from time to time in a wild state have been described as cowardly mischievous animals. What a difference, then, do we perceive in their character from the determined perseverance in battle, the contempt of pain, danger, and death, that characterize the English bull-dog! Here, again, we have a striking instance of the change of qualities, habits, or instincts, by the change of organization. Temperature, quality of food, and the kind of danger to which an animal is exposed, will produce a wonderful alteration in organization; and thus new instincts become developed, and probably, in the course of two or three generations, they become hereditary.

Extraordinary instances of the power of instinctive hereditary propensities are frequently observed in a breed called Retrievers. Magendie, hearing that there was a race of dogs in England which stopped and brought back game of their own accord, procured a pair; and, having obtained a whelp from them, kept it constantly under his eyes, until he had an opportunity of assuring himself that, without having received any instruction, on the very first day that it was carried to the chase, it brought back game with as much steadiness as dogs that had been schooled into the same manœuvre.

Both the male and female appear to possess similar powers of transferring to their offspring their hereditary feelings and propensities. Sometimes those of the male, and, at other times, those of the female parent predominate*. "A very young dog,

* "Philosophic Transactions," Mr. Knight.—This gentleman has lately favoured us with a paper on the subject, in the Transactions of the Royal Society, shewing how the acquired instincts of the springing spaniel and retrievers have become hereditary. Mr. Knight has given us nothing new: had he consulted Mr. Blaine's work on Dogs, who may be regarded as the father of canine medicine, he would have found that this subject formed a

a mixture of the springing spaniel and setter, dropped upon crossing the track of a partridge, as its male parent would have done, and sprung the bird in silence; but the same dog, having within a couple of hours afterwards, found a woodcock, gave tongue very freely, and just as its female parent would have done."

Now, in this last instance, it will be observed, that the new peculiarities have an intimate relation to the habits of the animal in a wild state, and therefore do not attest any tendency to departure to an indefinite extent from the original type of the species; but when we consider the attainments, as well as the habits and dispositions, which the retriever, greyhound, shepherd's dog, bull-dog, and many others inherit, it seems to be of a nature and extent which we can hardly explain by supposing them to be modifications of the natural instincts, and necessary for the preservation of the species in a wild state. I can only attribute such remarkable habits to the modifications of structure.

"From the combination of various causes*, the history of no animal is more interesting than the dog. First, his intimate association with man, not only as a valuable servant and protector, but as his constant and faithful companion throughout all the vicissitudes of life. Secondly, from his natural endowments, not consisting solely in the exquisite delicacy of one individual sense, that fineness of olfactory nerve, by which earth and air send forth showers of perfumes—not merely combining memory with reflection, that soars above instinctive preservation or self-

part of the excellent introduction to his second edition, published many years ago.

Charles Lyell, Esq., author of the "Principles of Geology," has noticed "the effect of change of species," in animals, in consequence of domestication. "A race-dog," he says, "employed for hunting deer on the platform of Santa Fé, in Mexico, affords a beautiful illustration of a new hereditary instinct. The mode of attack which they employ, consists in seizing the animal by the belly, and overturning it by a sudden effort, taking advantage of the moment when the body of the deer rests only upon the fore legs. The weight of the animal thus thrown over is often six times that of its antagonist. The dog of pure breed inherits a disposition to this kind of chase, and never attacks a deer from before while running. Even should the latter, not perceiving him, come directly upon him, the dog steps aside, and makes his assault on the flank; whereas other hunting dogs, though of superior strength and general sagacity, which are brought from Europe, are destitute of this instinct. For want of similar precautions, they are often killed by the deer on the spot, the vertebræ of their neck being dislocated by the violence of the shock."

* Encyclopædia Britannica, article on Dogs, by Nimrod.

enjoyment—but qualities of the mind that absolutely stagger us in the contemplation of them, and which we can alone account for in the gradation existing in that wonderful system, which, by different links of one vast chain extending from the first to the last of all things, till it forms a perfect whole, is placed, as Professor Harewood elegantly expresses it, on the doubtful confines of the material and spiritual worlds."

It might have been instinct that enabled Ulysses' dog to recognize him on his landing in Ithaca, after an absence which must have put the power of memory at defiance, and he recognized him with all the acuteness and affection which instinct boasts. But what caused him to expire at his feet on the sudden dawn of unexpected happiness?

The heart of man could go no farther than this. I ask, By what name can we call those tender affections, those sincere attachments, which are every day witnessed in those faithful creatures towards human-kind? Virtue alone is too cold a term, as almost every good quality to be found in animated nature is to be found here. When we reflect upon the miserable existence so often the lot of this kind-hearted animal in this world, and consider the probability that, as Byron says, he will be

"Denied in heaven the soul he held on earth,"

we cannot but feel regret that he should be without his reward. Still this is a point not exactly decided upon by man, at least it has been considered as a fit subject for speculation by deep and able thinkers.

Having considered a number of animals, from beings of a simple to those of a more compound structure, and found that, in proportion as the complexity of their organization increases, their instinctive principles have diminished, whilst the number and dignity of their mental faculties have been more developed, we will ascend still higher in our animated chain, and consider the action of a class of animals whose mental attributes are more strongly marked than any we have hitherto observed. I use the term *mental* without hesitation in reference to the lower animals; for I do not believe that they are mere machines, or that the approximations which they exhibit to human intellect are the result of organization alone, any more than our mental faculties. And if there are any animals that should excite a sentiment of this kind more forcibly than others, it is the monkey tribe. Cuvier has placed this species next to man in point of intelligence and mental qualifications. No creatures, with the exception of man, present such anomalous appearances as those singular beings, in

whose formation Nature would seem to have amused herself in rudely caricaturing the human figure.

Other animals exhibit a more simple and regulated constitution:—the lion is bold and ferocious, but he is regularly so; the sheep, on the other hand, is mild and inoffensive, and he is always so;—but monkeys vary in their tempers almost as much as mankind. In the ourang outan and the chimpanzee, where the approximation to the human face and form is most remarkable, there is the greatest degree of intelligence, of gravity, and docility. There is nothing malignant nor disgusting about their characters, whilst in other breeds some are distinguished for petulance, some for mischief, some for malice, and, again, some are mild and harmless, and others exhibit sportive playfulness and innocent frolic. All of them, more or less, possess a great deal of cunning. Their natural instincts are very circumscribed, being chiefly confined to the rearing of their young, procuring their food, and defending themselves from enemies.

There is a species of monkey that has established itself on the rocks of Gibraltar, and though apparently without a tail, it has nevertheless a small tubercle in the place of that organ. This is the ape that figures so often in fable, both ancient and modern; and it is extremely probable that it was this species that led some French philosophers to believe that the race of men were "bastard slips" of a tribe of baboons.

Some of my hearers may not have heard an old story setting forth how a strong party of these apes, headed by a knowing old cheiraped, gave so much annoyance to a certain regiment in garrison on the rock, that at last they set their wits to work, and succeeded in capturing the ringleader. They shaved him close, both head and face; they then let him go. Away he scampered to his party, who had been watching him at a distance, eager, no doubt, to place himself again at their head, and lead them down to vengeance. He was received with a volley of sticks and stones by his own troop, who treated him so roughly, that he was forced to fly for his life. In this deplorable and degraded state he was fain to creep back to his old enemies, and presented himself at their quarters so wobegone, and with such a rueful visage, "all shaven and shorn," that there was no resisting the appeal. He was admitted, and remained with his new allies, whom he served with fidelity, upon the same principle that secures the faith of all other allies,—because he couldn't help it*.

* Monthly Magazine, Colburn's.

Cunning appears to be a principal feature in the character of these animals. In their attacks they commence operations at a distance, and endeavour to terrify their foes by their cries. Bands of these marauders are stated to be cruel enemies to the planter, and they have even been known to watch their opportunity and destroy a plantation from motives of revenge, and this, with submission, makes them almost too human.

There is a curious Sumatran species, the Siamangs, as they are commonly called by the Malays. They possess a head or chief, who has the character of being the strongest of the party. He directs their motions, and presides at their morning and evening howlings. Authors give very contradictory accounts of the disposition of these animals: some describe them as very intelligent, others very revengeful, others remarkably tractable. The truth seems to be, as the groom said of the horses, "They've a got their different tempers, just like we Christians." At all events, the lady Siamangs are most excellent mothers, and carefully preside over the ablutions of the little Siamangs. These they carry to the banks of a stream, wash them thoroughly, notwithstanding their cries and kickings, and then wipe them dry, after the most approved method of conducting the baby-toilette. In the Chimpanzee, the African type of ourang, there are some points in which they come nearer to man than any other kind. A veterinary friend of mine, Mr. Youatt, professionally attended Tommy, as he was called, in his illness, which terminated fatally at the Zoological Gardens. Peace be with him! Everybody loved him, everybody was kind to him. A few days before his *departure* he was suffered to come forth for a closer enjoyment of the kitchen fire; and there he sat, leaning his cheek upon his hand, watching the roasting of a depending shoulder of mutton, as it revolved and hissed between him and the glowing grate—no, not with the prying mischievous eyes of ordinary monkeys, but with a pensive philosophic air that seemed to admit his own inferiority, and to say—"Ah! man is, indeed, *the* cooking animal*!"

In a lecture "On the Intellectual and Moral Principles of Animals," which I had the honour to deliver a few months since in this theatre, I adduced sufficient proof, "that the distinction in the intellectual, ay, and even the moral, qualities of the biped and the quadruped, is in degree, and not in kind; and, however proud man may hesitate to acknowledge it, that the organization is the same, the connexions the same, the functions the same, and the only difference is in the proportion of the parts." I did

* Colburn's Monthly Magazine.

not refer to the different disgusting and unnatural tricks that are taught to various quadrupeds, but to those only which could be considered as the result of their reasoning powers. I could, if time permitted, adduce the most extraordinary anecdotes of dogs, to prove that they possess all the motives and feelings worthy of a rational creature,—that they have memory and attention, reflection and judgment, and a consciousness of truth and duty, affection, gratitude, disinterestedness, and devotedness. I have in the present lecture shewn that the monkey tribes possess many of these, and, even in a state of captivity, they present a more undisguised and complete development of the actual animal passions than is, perhaps, to be found in any other creature. The following anecdote must conclude this part of my subject, which will prove that they are not only capable of attachment, but subject to the most uncontrollable paroxysms of rage and passion :—

"A chacma, of large size and proportions, kept in the Paris menagerie, managed to escape one day from his cage into the enclosure belonging to it. Irritated by the stubborn refusal of the baboon to return, his keeper, not very prudently, threatened him with a stick. This, instead of producing the desired effect, roused all the ferocity of the beast, and he flew at the unfortunate man, whom he wounded so severely in the thigh as to endanger his life. The chacma continued at large, though almost every expedient to make him return to confinement was resorted to. No,—all would not do. At last it was recollected that the keeper's daughter, who had been kind to the prisoner, seemed to be a decided favourite ; so the pretty French woman, *tirée à quatre épingles*, appeared at a door opposite to that of the cage through which the animal had to pass. But even so powerful a lure had no effect, till a man approached the belle and pretended to caress her. This was too much ; the poor jealous dupe could not bear the sight. He darted furiously through the open door of his prison at the hateful intruder, and was instantly secured. This was treacherous ; but as the lords of the creation themselves, from Samson down to the Macheaths, have been the victims of the dear delightful deluders, a chacma has no right to complain*."

From these few anecdotes you must perceive that there are other animals than man that can reason in a degree; and whether in man or a goose, I hold one thing to be undeniably demonstrative of the existence of the reasoning principle, and that is, the capability of receiving instruction, or of forming certain conclusions from previous experience. We recognize this quality, as I said before, in a greater or less degree throughout the higher order of animals, and, view it as we will, we can conclude it to be the

* Cuvier.

effect of nothing else than reason. It is utterly inconsistent with the acknowledged properties of *instinct*.

We have now arrived at the highest link of Nature's vast and animated chain of beings,

"Nature's ethereal, human angel, man."

"Ignorant and uncivilized, he is a ferocious, sensual, and superstitious savage. The world affords some enjoyments to his animal feelings, but it confounds his moral and intellectual faculties. External nature exhibits to his mind a mighty chaos of events, and a dread display of power.

Viewed in this respect, he almost resembles a demon, whilst in a civilized state he bears the impress of God. Seen in his crimes, his wars, and his devastations, he might be mistaken for an incarnation of an evil spirit;—contemplated in his schemes of charity, his discoveries in science, and his vast combinations for the benefit of his race, he seems a bright intelligence from heaven*."

Man as he now exists can only be raised with great care and difficulty from the infant to the mature state. All his motions are at first automatic, and become voluntary by association. He has to learn every thing by slow and difficult processes. Many months elapse before he is able to stand, and many years before he can provide for the common wants of life. Without the mother or the nurse in his infant state, he would die in a few hours; and without the laborious discipline of instruction and example, he would remain an idiot, and inferior to most other animals. His reason is only acquired gradually, and, when in its highest perfection, is often uncertain in its results. "It is, therefore, very probable that, in his early or first created state, he must have been endowed with instincts that, for a long while, supplied the want of reason, and which enabled him, from the first moment of his existence, to provide for his wants, to gratify his desires, and enjoy the powers and activity of life†."

The instincts of man are but few, and they are immediately connected with the preservation of the individual and the propagation of his kind. The sucking of a child may be classed under this head. A healthy vigorous child, within a short time of his birth, gives the most unequivocal evidence of a desire to suck, before any thing is brought into actual contact with his mouth. If this is not an instance of pure instinct, I know not what it is. The Author of nature has united in man every species of beauty, and has formed of these a combination so wonderful, that all animals in their natural state are struck at sight of

* Combe on the Constitution of Man.

† Sir Humphry Davy's Last Days of a Philosopher.

him with love or terror. Thus, too, is fulfilled the word which conferred on him the original sovereignty of the world (Gen. ix, 2). He is the only being who has the disposal of fire; hence he has been called the cooking animal; and he alone practises agriculture—"the ox never thinks of resowing the grain which he treads out on the barn floor, nor the monkey the maize of the field which he plunders."

Man came into the world already tenanted with inhabitants of various characters and qualifications. Beasts are, therefore, his elder brethren. He is not an insulated being; he relies on the friendships of others. The happiness of every individual is attached to the happiness of mankind—he is under obligations to exert himself for the general good, because his own depends upon it. But interest is not the only motive which renders virtue a duty to him: he is indebted to Nature for its sublimest lessons. Born with few instincts, he was laid under the necessity of forming his intellect on her productions. He could imagine nothing but after the model of every kind with which she has presented him. He was instructed in devising and perfecting the mechanic arts from plans suggested by the instincts of animals, and in the liberal arts and sciences after the model of Nature's own immediate harmonies and plans.

> "See him from nature, rising slow to art,
> To copy instinct then was reason's part;
> Thus to man the voice of nature spake:
> Go,—from the creatures thy instruction take;
> Learn from the birds what food the thickets yield;
> Learn from the beasts, the physic of the field;
> Thy arts of building from the bee receive;
> Learn of the mole to plough, the worm to weave;
> Learn of the little nautilus to sail,
> Spread the thin oar, and catch the driving gale."

One of the constituent features of the human organization—one of the most decided of our corporeal inclinations—and, at the same time, one of the most imperious necessities of our spiritual existence is—*the tendency to imitate.* Commencing in our cradle, it follows us at all times, and every where. It is by this tendency that man attains his development, both moral and physical, and that the individual is enabled to profit by the ideas and discoveries of all. To this source may be traced the origin of society, of language, and of civilization.

A very remarkable instinct is exhibited by an animal called the rat-hare, which, on account of its peculiar propensities, ought to be called the hay-maker, since man may, or might, have learned that part of the business of the agriculturist which consists in providing a store of winter provisions for his cattle

from this industrious animal. These animals make their abode between the rocks, and during the summer employ themselves in making hay for a winter store. Inhabiting the most northern districts of the old world, the chain of the Altaic Mountains, they never appear on the plains, or in places exposed to observation, but always select the rudest and most elevated spots, and often the centre of the most gloomy, and at the same time humid forests, where the herbage is fresh and abundant.

About the middle of the month of August, these little animals collect with admirable precaution their winter provender, formed of select herbs, which they bring near their habitations, and spread out to dry, like hay. In September, they form heaps or stacks of the fodder they have collected under the rocks, or in other places sheltered from the rain or snow. Where many of them have laboured together, these stacks are sometimes as high as a man, and more than eight feet in diameter. A subterranean gallery leads from the burrow, below the mass of hay, so that neither frost nor snow intercepts their communication with it.

These stacks of excellent forage are sought out by the sable hunters to feed their harassed horses; and the natives of this part of Siberia pilfer them for the subsistence of their cattle*.

I have now nearly brought my lecture to a close. Its main feature has been to endeavour to prove, that instinct is neither the result of instruction nor observation, but the action of some external agency upon the organization. The only question to be considered now is—*in what this external agency consists.* Mr. Addison was of opinion, "that it could be only accounted for upon the same principle that the greatest philosophers accounted for the principle of gravitation in bodies, which is not to be explained by any known qualities inherent in the bodies themselves, nor from any laws of mechanism, but as an immediate impression from the first mover of the divine energy acting on the creatures." Kirby appears to agree with Addison, and says, "If we consider the effect produced by the great physical power of the heavens, by whatever name we distinguish them; that they form the instrument by which God maintains the whole universe in order and beauty, produces the cohesion of bodies, regulates and supports the motions, annual and diurnal, of the earth and other planets;—and if we further consider what he effects both upon and within every individual sphere and system, throughout the whole universe, by the constant action of these viceregal powers, if I may so call them—if we closely consider what these powers actually effect, it will require no great stretch of faith to believe that they may be the inter-agents by

* Kirby's Bridgewater Treatise.

which the Deity acts upon animal organization and structure, to produce all the varied instincts*."

I confess that I have not sufficiently studied this part of the subject to give a decided opinion on it; yet, from what I have observed, I consider that these are strong grounds for the belief. We have some remarkable circumstances connected with the vegetable kingdom that support the opinion. I have shewn in the course of the lecture, that some of the most wonderful instincts of animals are those connected with the preservation and propagation of the species: so, in plants, this is beautifully shewn in the development of those parts peculiarly connected with the production of the seed—the expanded flower, and the operations going on in it, is the analogue of the reproductive instinct of the animal: *this is all produced by physical action* upon the organization of the plant. Now, if you consider the infinite variety of plants, and the wonderful diversity of their parts of fructification, and that they are all produced in their several seasons and stations by the action of some physical powers upon their varied organization, and by means of the soil in which they are planted, we shall think it nearly as wonderful and unaccountable as the instinctive operations of the various creatures that feed upon them; and as all plants have their appropriate fructification, so they have other peculiarities connected with their situation, nutriment, and mode of life, corresponding, in some measure, with those instincts that belong to other parts of an animal economy. Some with a climbing or voluble stem, constantly turning one way, and some as constantly turning another. Thus the hop twines from the left to the right, while the hindweed climbs from the right to the left. Some close their leaves in the night, and seem to go to sleep; others shew a remarkable degree of irritability when touched. The blossoms of many flowers, as the sun-flower, follow the sun from his rising to his setting. These, and many other examples, could be produced, shewing that the same physical action upon a peculiar organization produces all these effects. All these circumstances indicate an analogy between certain phenomena observable in the history of plants and some of the instincts of animals; and tend to prove that the proximate cause of both may be very nearly related, and that, as the immediate cause of the vegetable instinct is clearly physical, so may be that of the animal. But all this reasoning is mere conjecture. In truth, every attempt that has been made to discover the cause of instinct has been utterly vain and unsatisfactory.

As to the doctrine, that instinct is the result of the *immediate*

* Kirby's Bridgewater Treatise.

inspiration of the Deity, that is refuted by the simple fact, that it sometimes is found to be at fault; such as the laying of the eggs of the flesh-fly in the flowers of "*stapelia hirsuta*," instead of in carrion, their proper nidus, and those of the common house-fly in snuff instead of dung.

That it is identical with reason is a proposition equally untenable, as I have shewn in this lecture that it is exercised with the same facility and perfection by the young insect as the old one. Besides, no degree of reason could be adequate to the production of such complicated labours as we witness among bees: a man could not perform such operations in a year, even with the best natural mechanical genius, and a competent knowledge of geometry, as a bee does when only two days old. I have likewise, I hope, sufficiently proved the fallacy of the opinions of Descartes, and others, who maintain that brutes are mere inanimate machines,—absolutely destitute not only of reason, but of all thought and perception; and that their actions are the only consequences of the exquisite machinery of their bodies. They are manifestly sensitive beings, and possessing reasoning powers to a certain degree. They accommodate their operations to time and circumstance. They combine, they choose the favourable moment, they avail themselves of the occasion, and are capable of receiving instruction by experience. Many of these operations announce reflection: the bird repairs a shattered nest, instead of instinctively constructing a new one. The hen who has been robbed of her eggs, changes her place in order to lay the remainder with more security; and the anecdote which I related in a previous lecture, respecting the cat and kittens belonging to Mr. Stevens, of this town, discovers both care, artifice, and instinctive maternal affection*.

* A cat, belonging to Mr. J. Stevens, of the Red Lion Inn, Truro, was conveyed from the hotel to the farm, belonging to the proprietor of the inn, about a mile or more, situated on the old Bodmin road, for the purpose of destroying some mice in a barley-mow. But poor puss had not much time to exercise her wonted abilities on the mice, for very soon she became the mother of *seven fine sprawling kittens*.

To her unspeakable grief, three of her young ones were consigned to a watery grave before they even had an opportunity of opening their eyes on this beautiful world. The authors of the melancholy catastrophe, going to the barn on the following day, found no traces either of the mother or her remaining young ones. They called, but all was silent; they searched, but Tabby was invisible. Here the matter rested for several days; when at length Puss made her appearance in the Red Lion-court in a very slender condition. Having satisfied her hunger, and loitered about the house during the day, late at night she took her leave, carrying with her all the provisions which she conveniently could in her mouth. For several days she repeated the same course of operations, regularly returning to the hotel in the morning, and leaving it, not empty mouthed, at night.

That brutes possess memory, is self-evident to every one: even bees are known to possess this quality; for after hours of wandering, they return to their own particular hives, which they clearly distinguish from all others in the same neighbourhood. This fact is well expressed by Mr. Rogers, in his poem of the "Pleasures of Memory;" though he is mistaken in supposing the bee to be reconducted to its hive by the scent of the various flowers which it has visited, for bees fly *straight* to their hives from great distances.

> "Who guides the patient pilgrim to her cell?
> Who bids her soul with conscious triumph swell?
> With conscious truth retrace the mazy clue
> Of varied scents that charm'd her as she flew?
> Hail! Memory, hail! thy universal reign
> Guards the least link of Being's glorious chain."

It is true that we can only see the necessary steps leading to instinct—its essential character is as impenetrably concealed from us as the essence of matter, and to dispute upon it is an equal waste of time.

The same may be said of mind. A string of phenomena dependent upon the living brain is called *mind*. In observing these phenomena, which are simply the functions of the living brain, consists the true philosophy of the mind. Sir H. Davy believed "that there was in the brain and nerves matter of a nature far more subtle and refined than any thing discovered in them by observation and experiment, and that the immediate connexion between the sentient principle and the body may be established by kinds of *ethereal matter*, which can never be evident to the senses." Now, even call it, for a moment, an ethereal matter, we are still as ignorant as ever of the essence of mind. But

Her proceedings having excited attention, she was followed in one of her nocturnal retreats; not to the barn from which her young ones had been so cruelly taken and drowned, but to the top of a barley mowhay, at some distance. On beating up her quarters there, she was discovered feeding her young ones, which had by this time become plump and sleek, and as wild as young tigers. The hole which the mother had made in the mowhay to afford a passage and retreat to the young ones was particularly curious. A few day afterwards, finding, perhaps, that her own daily journeys were too fatiguing, or thinking it necessary that her young ones should be introduced to the world, in order to rub off the rust of their country education, or, what is most probable, feeling assured that her kittens had attained an age which would save them from sharing the fate of their departed relatives, she took advantage of two dark and silent nights, when worrying dogs and naughty boys were within doors, to convey them to the hotel kitchen, where they found an hospitable welcome. This circumstance occurred in the town, and the truth can be vouched by many persons now residing here, who were witnesses to it.

while rejecting *this subtle fluid, "the ethereal matter,"* I cannot for an instant agree with the French philosophers, who imagine that by organization, powers not naturally possessed by matter were developed, and that sensibility was a property belonging to some unknown combinations of insensate atoms. I never can believe that intelligence can result from combinations of insensate and brute atoms. I can as easily imagine that the planets are moving by their own will or design round the sun; and it is with disgust that I hear the plan of the physiologist, "of the gradual accretion of matter, and its becoming endowed with irritability, ripening into sensibility, and acquiring such organs as were necessary by its own inherent forces; and at last rising into intellectual existence." Surely, a walk into the green fields or woods, or by the banks of a river, would be sufficient to elevate our thoughts from nature to the God of nature, for there may be seen in all the boasted powers of matter, the instruments of the Deity—the sunbeams, the breath of the zephyr, awakening animation in forms prepared by divine intelligence to receive it—the insensate seed, the slumbering egg, which were to be vivified, appearing, like the new-born animal, works of a divine mind.

It can be scarcely necessary in these days to direct an adult audience from nature up to nature's God; but I would wish to impress, if possible, on the minds of some of the junior part of my audience, who may be now studying the book of nature, that the conviction that every thing tends to some immediate or eventual good, is the greatest incentive to its study. This conviction makes the study of nature highly interesting, and may, indeed, be said to render labour delightful. To those who entertain such sentiments, every thing seems animated, beneficent, and useful; they have the happy talent of discovering even

> "Tongues in trees, books in the running brooks,
> Sermons in stones, and good in every thing."

MR. CHARLES CLARK IN REPLY TO MR. MAYER, ON THE DOCTRINES TAUGHT BY PROFESSOR COLEMAN.

To the Editor of "The Veterinarian."

Veterinary Infirmary, Giltspur Street,
July 14, 1838.

Sir,—In your last Number I find myself called upon, or rather "respectfully requested," to prove an allegation made in

the *Lancet*, some ten years ago, respecting Professor Coleman's patents and peculiar theories. The style of this challenge might well excuse my total neglect of it; for who, Mr. Editor, ever heard of a meeting composed of blanks, held at a blank place, on a blank day, which deserved any serious notice or attention. However, be they who they may, they shall not experience a blank reception, especially as I have, at least, one palpable antagonist in the person of a young practitioner, who "signs on behalf of this blank meeting," viz. Mr. Thomas Walton Mayer, of Newcastle-under-Line; and whether this gentleman does, indeed, represent a phalanx of midland veterinarians, or is, in very truth, the all-combined mover, seconder, president, and secretary of the meeting, is a matter of some doubt, though of no consequence either to me or to the question at issue. Appearances rather incline me to the latter opinion, since there are several inconsistencies in his short but ambiguous communication, which could hardly have occurred under the direction of maturer judgments.

I must beg the reader to re-peruse it carefully, when it will be observed, that, besides the incongruity above adverted to, he has the simplicity to require me to defend assertions made ten years ago by a reference to present opinions, changed, as he declares them to be, from what they then were. In fact, he most forcibly proves the truth of my remarks on Mr. Coleman's opinions, by broadly asserting that they (his doctrines) are now "altered and modified considerably;" and, having thus nonsuited himself at starting, there appears little left for me to do. Yes; he distinctly accuses the Professor of having veered round, and changed the doctrines which he had pertinaciously promulgated for thirty years before. In so doing, he admits the severest censure upon that which it was my object to reprobate, and by thus tardily taking up the gauntlet which was offered, and accompanying it with such a statement, he has given the best possible proof that I was right at the time.

The Professor can know nothing of this indiscreet attack that is made upon us both. Well may he say, "Save me from my friends." An uninitiated reader would conclude that the object of Mr. Mayer and his blank colleagues was to call up a storm around the Professor, and elicit an exposure that should cover him with confusion.

They can be no sincere friends of his who thus disturb the subject.

They have gone beyond me, who merely denounced certain theories, backed by patents, which the Professor had held and cherished all his previous life;—they now declare that he

has *changed* them. This may appear a light thing to such as Mr. Mayer, jun., who, perhaps, was endued with but few opinions a half-score years ago, and, being still young, may probably by that time hence have reversed some of those he at present holds; but it is a serious and derogatory charge as it respects the veteran Professor of St. Pancras; and times are changed, or some volunteer would arise to rebut the accusation against him. But to the point: I would that it were true, as these gentlemen assure us, for it is "better late than never" to amend; yet I must be allowed to distrust their information, or at least to ask, where is the evidence to be found of the change they allude to? Is it in any book or pamphlet? Is it in public speeches—in unpublished lectures—in private communications to Mr. M , or his friends—or in any avowed or tangible form whatever that can be pointed out? Or does it not alone consist in an absence from certain indirect attacks on the doctrines of others, formerly so much indulged in, and in silence respecting some favourite dogmas which the good sense of the profession has rejected and outgrown? Yes; it is the body of the profession which has changed, not Mr. Coleman; and if he has laid aside any worn-out theories, or given up any mistaken practice, it is in obedience to their feeling, and, still more, to the voice of the public, and unattended either by a confession of error, or the public substitution of more correct views. Let this be as it may; for I stand on different ground, viz. the truth of assertions in 1828, which I am still prepared to justify and maintain; and if it is admitted that the Professor has changed his opinions, it more than half proves my case, and counts just so much in my favour.

At present, Sir, I merely accept the challenge, and state what will be my course in an analytical survey of his expressed doctrines. Here the difficulty which arises is not from their number or variability, but from the paucity of published facts; Mr. Coleman having most carefully avoided putting his hand to paper for many past years.

However, we are not without documents: there is a large book which cannot be recalled, and a pamphlet of frog-squeezing notoriety, besides several patents which must not be forgotten. His opinions on suspended animation, on the ventilation of stables, on the treatment of inflamed lungs, are public property; and an *ex-officio* letter, which appeared in the *Lancet* about eleven years ago, must be considered *seriatim*, as its claims cannot be conceded or allowed.

In entering on this unpleasing task I entirely disclaim any personal or factious feeling. The inquiry is unsought by me; but I hope it may be of some advantage to the cause of truth,

and redound to the credit and justification of our noble art, which has long been struggling under an incubus of false doctrine. Your's, &c.

CHARLES CLARK.

A SINGULAR CASE OF STRINGHALT.

A VERY interesting case of this mysterious disease, and of the post-mortem examination of the horse, has lately occurred.

Guildford, first called Roundhead, and then Landlord, was foaled in 1826. He was got by Hampden, out of a Sir Harry Dimsdale mare. In 1828, and being two years old, and also the property of the Duke of Richmond, he won a £50 plate at Goodwood. In 1829, and belonging to Lord W. Lennox, he won 55 guineas at Hampton. Being then transferred to Mr. Coleman, he won 50 guineas at Guildford; and in the same year, having been purchased by Mr. Pearce, he won 60 guineas at Basingstoke.

In the course of this year stringhalt began to appear in a slight degree, but evidently, although slowly, increasing. There soon began to be a little difficulty in getting him off; but when he had once started, neither his speed nor his stoutness appeared to be in the slightest degree impaired. He continued on the turf until 1836, and won for his different owners seventeen races, the produce of which, exclusive of bets, amounted to £1435.

The difficulty and loss of advantage in starting had now increased to a degree which rendered it prudent to withdraw him from the turf, and he came into the possession of Dockeray, who used him for the purpose of leading the young horses which he had under training. This is well known to be hard work, and his rider was a man of some weight. In addition to this, he was generally hunted twice in the week. His first starting into a gallop had something singular and repulsive about it. It was a horrible kind of convulsive action; and so much so that he frequently knocked off his shoes on the first day after they were put on: but when he got a little warmed all this disappeared. He gallopped beautifully, and was a very sure fencer. The sport, however, being over, and he returning to a slow pace, the stringhalt became as bad as ever.

At length the old horse became artful, and it was with great difficulty that he could be made to lead; sometimes he refused it altogether. In consequence of this he was sent to St. Martin's Lane to be sold. The highest bidding for him was £3..14s, and the hero of the turf and the field was doomed to the omnibus.

There he was cruelly used, and this spasmodic convulsion of his hind legs sadly aggravated his torture. The skin was presently rubbed from his shoulders—his hips and haunches were bruised in every part—and his stifles were continually and painfully coming in contact with the pole.

In this situation he was seen by Mr. Ainslie, who is now Veterinary Surgeon to "The Society for the Prevention of Cruelty to Animals." There is a fund at the disposal of that society for the purchase of worn-out horses, who are immediately released from their misery by the pole-axe of the knacker. Mr. Ainslie bought him for this purpose, being at the same time influenced by another laudable motive—the wish to ascertain what light the dissection of an animal who had had stringhalt to such an aggravated extent, and for so long a period, might cast on the nature of this disease. The horse was sent without delay to the Veterinary College.

I saw him a little before he was slaughtered. He was still a noble-looking animal, and seemed to possess all his former strength and spirit unimpaired; but he was sadly scarred all over, in consequence of his being put to a kind of work for which his spasmodic complaint so entirely incapacitated him. His neck and his withers were dreadful to look at, and he had bruises on every part. So aggravated a state of stringhalt I had never seen. Both hind legs were affected, and both in an equal degree; and the belly was forcibly struck by the pastern joints every time the hind feet were lifted. The belly and the pastern joint were both denuded of hair in consequence of this terrible battering.

He was destroyed by the injection of prussic acid into the jugular vein. The dissection was conducted by Mr. Spooner, occasionally assisted by Mr. Sewell and Mr. Ferguson. The following account of it was kindly dictated by Mr. Spooner.

On dissecting off the skin, all the muscles presented their perfect normal character. There was not the slightest enlargement or discolouration of the fasciæ. The muscles of both extremities were dissected from their origins to their tendinous terminations, and their fibrous structure carefully examined. They were all beautifully developed, presenting no inequality or irregularity of structure, nor aught that would warrant the suspicion that any one of them possessed an undue power or influence beyond the others. The only abnormal circumstance about them was a rather darker yellow in colour than is usually found; but this referred to them generally, and not to any particular muscle or sets of muscles.

The lumbar, crural, and sciatic nerves were examined, from the spot at which they emerge from the spinal cord to their ultimate

distributions. The crural and lumbar nerves were perfectly healthy. The sciatic nerve, at the aperture through which it escapes from the spine, was darker in colour than is usual, being of a yellowish brown hue. Its texture was softened, and its fibrillæ somewhat loosely connected together. The nerve was of its usual size; but on tracing it from the ischium, and in its course through the muscles of the haunch, several spots of ecchymosis here and there presented themselves, and they were more particularly marked on that part of the nerve which is connected with the sacro-sciatic ligament. As the nerve approached the hock, it assumed its natural colour and tone; and the fibres given off from it to the muscles situated inferior to the stifle-joint were of a perfectly healthy character.

On taking out a portion of the nerve where it appeared to be in a diseased state, it was found that this ecchymosis belonged to the neurilema surrounding the whole of the internal fibres. It was confined to the membranous investiture of the nerve, and the substance of the nerve, when pressed from its sheath, presented a perfectly natural character.

The cavity of the cranium, and the whole extent of the spinal canal, were next laid open. The brain and spinal marrow were deprived of their membranous coverings, and both the thecæ and their contents diligently examined. There was no lesion in any part of them, not even at the lumbar region.

The articulations of every joint of the hind extremities then underwent inspection, and no disease could be detected in either of them.

From the present post-mortem examination, and many others which Mr. Spooner had previously instituted, he was of opinion that this peculiar affection is not referrible to any diseased state of the brain or spinal cord, nor to any local affection of the muscles of the limbs, but simply to a morbid affection of the sciatic nerve. Other circumstances had more or less varied; but he had not dissected a single case of stringhalt in which he had not disease of this nerve—the nerve which mainly contributes to supply the hind extremities with sensation and the power of voluntary motion. The equal action of the muscles being destroyed in consequence of the diseased state of this nerve, the flexors, which are naturally more powerful than the extensors, draw the tarsus on the tibia, and the tibia upon the femur, beyond the position usually determined by the natural mechanical connexions and movements of these joints; and then, from the peculiar arrangement of the articulating surface, between the tibia and the astragalus, the hock-joint suddenly becomes elevated, producing that remarkable spasm of the limb which is so marked a characteristic of this affection. Y.

ON THE ACARUS, OR INSECT OF ITCH AND MANGE.

By Professor Hertwig, *of Berlin.*

[Continued from p. 378].

The number of acari found on a mangy horse differs in different seasons, and also depends on the time that the animal has been infected, and the extent of the infection. From the beginning of spring until the autumn these insects are to be found in the greatest numbers on mangy horses. In the colder seasons their numbers are perceptibly diminished, and they sometimes seem to have almost vanished; but this, however, they never completely do. Their habits are the same as with the acari of the human being. They penetrate through the skin, and form under it little passages of different lengths and in different directions; partly to obtain nourishment, and partly in order to deposit their eggs.

In warm weather and sunshine they may often be found on the surface of the skin in the mangy sores, on the sound skin, and even on the hairs. In the spots at which they have pierced through the skin a knotty elevation of the cuticle is found, which gradually becomes softer, and soon separates itself from the true skin (in the same manner as in scalds), and dries into a scaly scab, which, with the hair, is easily loosened from the cutis. This always takes place in from seven to ten days, first only in a very small spot, but soon afterwards in patches of greater width.

If a small piece of the upper skin through which the acari have pierced is submitted to the power of a good microscope, there will be found on and sometimes under the true skin small passages, the diameter of which is hardly so great as that of the finest hair, and at the end of these passages are the acari. This, however, will not be perceptible if the disease has existed more than four or five days, as, after that, the outer skin becomes withered, and ceases to exist. On the true skin these passages have more the appearance of grooves or furrows.

Under the dead cuticle there exists an exhalation of coagulated matter, which usually is first yellow, slightly glazed, and then grey. It soon dries into a horny, scaly crust, and as fast as one layer falls off it is succeeded by another. This produces considerable itching, and, in order to ease this, the animal rubs and bites the mangy place until he often draws blood. The skin

thus becomes inflamed, thickened, and hardened. When the acari remove from a mangy place, and the horse ceases to rub it, a new smooth, black scarf-skin is speedily formed.

In the foregoing description of the changes in the skin I have described the mange in horses as I generally have seen it. I wish that I could give a clearer and more particular description of this disease; but it does not put on the same appearances in all horses that are affected by it; and I must candidly confess that frequently, when I have examined horses which have had some skin disease and have been unable to discover any acari, I have been in doubt whether it was really mange or not.

The existence of the acari forms the only certain proof of the disease being mange. Hence veterinary surgeons and possessors of horses frequently err, as they invariably pronounce every itchy eruption of the skin to be mange. Happily the results of this error are not very bad, since the treatment which is found to be of service in scrophula and other skin diseases is also equally valuable in mange.

The horse acari will be communicated to the human being, and also to other animals, and frequently occasion great disease of the skin: this however does not always occur, on account of the difference in the skin of different individuals.

Instances of the horse acari being communicated to the human being have been recorded by many writers; namely, by E. Viborg, (Sammlung von Abhandlungen), by Sick (Unterricht fur die Landwirthe zur Abwendung und Heilung der in Kriegeizeiten vor kommenden Vichkrankheiten, Berlin, 1807), and by Greve (Erfahrung und Beobachtungen über die krankheiten der Hausthiere, Oldenburg, 1818). The last writer also speaks of this disease being communicated from the horse to the ass, but maintains that this is the case with no other of our domesticated quadrupeds. This assertion, however,is contradicted in the Revue Medic. tom. x, and also in Froriep's Notizen. 1823, where it is said that in Bergamo several horses, thirty men, and a cow were infected by one mangy horse.

Grognier, in the yearly report of the Veterinary school at Lyons for 1817 (Annal. de l'Agricult. Franc. 1817), states that a mangy horse infected several men and two cows which were in stalls near him. I myself know a gentleman, near Berlin, whose horses were suffering under a very severe attack of mange. His sheep suddenly, and without any apparent cause, became mangy; and, at length, all the members of his family and his servants had an itchy eruption on every part.

I also saw two grooms belonging to the veterinary school in this town who were twice tormented by an itchy eruption when

they had to look after and attend on mangy horses; and I have had personal experience of the infectiousness of this disease. From this last-mentioned fact I know for a certainty that the horse acari will pass on to the human being, and spread over his whole body—pierce through the skin, and speedily reduce it to a diseased state, very much resembling mange, and thereby cause, especially during the night, a dreadful itching*.

In order to ascertain with certainty the consequence of the attack of these insects, Herr Schade, a very attentive student at the veterinary school in this town, resolved to place some acari taken from a horse on his own body. For this purpose he took five female and several male insects, and, placing them on the naked skin of his left arm, covered them with a watch glass, and fixed this on by means of a pitch plaister. The experiment could not, however, be continued long in this manner, for the watch-glass was pressed so close to the skin that its edges caused deep furrows and very great pain; it was therefore removed on the second day: but Herr Schade renewed the experiment by placing eight acari of both sexes on the skin under his arm, which he covered with a piece of fine paper, about four inches in circumference, and fastened this on by a strip of adhesive plaister. The following were the consequences:—

In five minutes after the acari were placed on the skin a terrible itching arose, which continued with periodical increase and decrease for five days.

After the lapse of thirty-two hours, only four of the acari were to be found on the skin. Several elevated red spots, of the size of a pin's head, were, however, visible on it, and on one of these, the head of which was slightly tinged with yellow, were two minute eggs; while in the neighbourhood of these spots were to be seen small hair-like passages. These appearances continued unchanged on the following day.

On the fifth day these passages were more perfectly formed, and were easily perceptible with the naked eye. One of them was nearly three-quarters of a inch long, and divided at the end like a fork; they all looked like smooth, red, slightly elevated lines passing in different directions. When cut through with a lancet, they were found to be hollow, and sometimes in, and sometimes inme-

* The difference between this quadruped itch and the real itch in the human being is, so far as I can see, this, that the vesicles are yellower, and generally larger in the former than the latter, and have also more redness of the skin around them. The most important difference, however, between these two disorders of the skin is, that that derived from the animal spreads over the face and head, which parts are, as is well known, never attacked by the real itch of the human being. Even on the head the itching caused by the animal itch it incessant, and very great.

diately under the outer skin. On these passages, or, rather, near to them, were small bladders, which contained a clear fluid. The acari were neither to be found on the skin nor in the passages or bladders.

From the fifth until the twelfth day the irritation gradually diminished, and at length entirely ceased. The bladders gradually dried up; the passages became less visible, and, on the twelfth day, the upper skin appeared covered with little dry scabs, which easily loosened themselves, and left behind a healthy skin. The results of these experiments prove that the horse acari will pass on to the human being, and thereby cause an itchy eruption on the skin; and also that, in many cases, the disease is not of long duration, and will get well of its own accord.

I must mention, however, in opposition to the results of these experiments, that Greve states that, in many cases, the disease produced in the human being by the horse acari will last for three to six or even eight weeks.

These observations are interesting, because they shew that the horse acari will live longer on a human skin favourably disposed for their existence than they will in glasses or any thing else without nourishment; but that they are incapable, in either way, of producing another generation.

Greve considers it surprising that the horse itch is capable of being communicated from one man to another. I saw a case of this kind in the veterinary school in this town, where one of the grooms took the disease from a horse, and communicated it to his wife. There was another case, in which a person had it more severely, and for a longer time; but he did not infect any one, although manifold opportunities were offered.

It is, I think, not at all wonderful that an insect so tenacious of life, and which can so easily adhere to any body as the acarus, should be communicated from one person to another.

I have not, as yet, been able to succeed in discovering whether the horse acari have the power of producing mange in cattle, sheep, goats, dogs, and cats.

The mange of cattle contains a species of acari which were first discovered by Gohier, at Lyons, in the year 1814, on some Hungarian oxen, which were driven after the Austrian army for the subsistence of the troops. They were so thin, and so eaten up by mange, that if a small quantity of dust was taken from their backs and examined, it was found to contain a great number of the acari.

When examined under a microscope, there appeared to be no perceptible difference between these insects and the horse acari; but no proofs have been given that the acari taken from these

oxen had any power to produce mange in horses, asses, or dogs, although they had bored through the skin in the space of thirty hours. Gohier maintains* that they appear to be destroyed when there.

The acari of the sheep were (as has already been stated) first discovered by Walz, and he very accurately described and delineated all their peculiarities.

The sheep acari are generally about the same size as those of the horse. When examined with a naked eye, they appear to be whiter than the horse acari, and this difference is also seen when they are placed under a microscope, although in a less degree. The body of the male insect is more rounded, and that of the female more oval, than in the horse; but, on the whole, there is a very great resemblance between them.

The time which the females require after pairing to produce their young, appears, according to my observations, to be from ten to twelve days. Walz states it to be sixteen days.

I have never known or heard of any instance of the sheep acari having produced disease in the human being; nor on horses, cows, goats, or dogs. Vilborg, however, asserts†, that the calf of a healthy cow, that had never been near mangy cattle, nor exposed to any other means of infection, caught the mange by lying in a sheep-pen, in which some sheep had been that were in a very diseased state. He also says, that he has known cows to be infected by mangy goats and sheep.

Gohier has found acari on dogs, cats, and rabbits; and Bosc, on cats. The former says that he could discover no visible difference between these insects and those taken from the horse, except that the former were rather smaller; and when taken from the body whence they derived their natural nourishment, they very soon died. Those taken from cats never lived beyond the third or fourth day.

Bosc has given delineations of the acari of the cat‡, but has not described them. They appear, according to these engravings, to be shaped like a turtle; and more resemble the acari of the human being than those of the horse. They are, however, considerably less, and have no suckers on their feet. The suckers, however, are not depicted in an engraving of the horse acari, also given by Bosc: therefore it is doubtful whether this difference really does exist, or it is only an error of the artist. I believe, that if the suckers had been wanting, Gohier would have made mention of it.

* Annales de l'Agriculture Franç. tom. lxiv, 1815, p. 24.
† Veterinär. Selskabets Skrifter. b. ii, s. 149.
‡ Dict. des Scienc. Médical. tom. xvii, Pl. 3, Fig. 5.

I have only seen the acari of mangy dogs, and they greatly resemble the horse acari, but are smaller, and have far thicker hairs on their sides, which almost look like feathers.

It is very probable that, under favourable circumstances, the acari from dogs and cats will pass on to human beings, and other animals; but though Gohier found, by his experiments, that they really bored through the skin of other animals, yet many observations serve to shew that the acari of dogs and cats, like those of cattle, die without producing any disease, when placed on the skin of man or any other animal.

B. Amoreux states* that sheep, cows, and dromedaries were infected by a mangy dog that was kept with them.

Grognier† gives an account of a young man who had handled a mangy dog, on whose hands and arms an eruption appeared very similar to the mange. Vilborg‡ says, a gentleman and his wife, who had been in the habit of fondling a mangy pug dog, were almost covered by an eruption very much resembling the mange in dogs. I myself have seen two boys who were infected by a mangy poodle, and a girl by a mangy cat; and I also once saw the disease communicated to a horse by a cat which had lain on his back while he stood in the stall.

Walz discovered acari on mangy foxes, which were only half so large as those of the sheep, and which, when taken from the fox, could scarcely be kept alive for a single day, although the same means were made use of as those by which the sheep acari were kept alive for several weeks. Walz does not describe their form. He states, that these acari were placed on two healthy sheep, and produced no visible effects; whence he concludes, that the opinion which is so prevalent in many countries, that sheep are infected by mangy foxes, is without foundation. I think that here, as in other similar cases, one or two experiments ought not to be considered as decisive.

I have often seen dogs become mangy when they have been biting mangy foxes, or when they have gone into their burrows; and many sporting men believe that the mange will pass from a fox to a horse, as the latter have become infected from a dead fox being placed on their back after the chace was over.

Since, then, it is clearly proved by the foregoing statements that insects are found in the itch of the human being and the mange of animals, which so closely resemble each other that they must be considered in natural history as only varieties

* Lettre sur la Médécine Veterinaire, tom. i., p. 20.
† Bericht über die Thierarnzeischule zu Lyon.
‡ Veterinär-Selskab. Skrifter, deel ii, s. 194.

of the same species; and if, farther, that the manner of living in these insects is the same, it may be concluded that the pathological state of the skin in the itch and the mange would be very similar. But if these facts are proved, there still remains another and a very important question to be decided.

Are the acari the consequence or the cause of the itch and mange, and are they invariable or only incidental?

The usual appearance of the disease in question is caused by a peculiarly acrid fluid, which has been considered by some persons to be the most extensive cause of cutaneous disease. The diseases which arise from these humours are caused partly by bad nourishment, partly by want of nourishment, or by uncleanliness, or infection, or they are hereditary. The origin of the itch blisters and mange sores is only the consequence of a more highly developed acidity, or sometimes these eruptions constitute the crisis of some other disease; and if acari are found in the itch and mange, they may be only parasites who are nourished by the fluid contained in the blisters.

This is not the place to notice all the opinions that have been held on the subject of the itch and mange, and I deem it sufficient for the present purpose to make the following observations:—

1. It has never been clearly proved that the itch or the mange can be produced by bad or by scanty food; and even when the disease appears cotemporaneously with the existence of these agents, it is well to examine carefully whether any other means of infection have been in the way.

2. Walz maintains that mange (and especially in sheep) is produced by damp ground, or standing water, which cause a softening and relaxed state of the skin. This is the only diseased state of the skin in which it is believed that the acari can spontaneously develop themselves in the organic matter.

3. There is never any peculiarly increased power, or any acidity of the humours to be observed at the beginning of itch or mange; but when the disease has spread itself over a great part of the body, and thereby disturbed the functions of the skin, the consequence will be a diseased state of the nutritious juices, and therefore of the humours.

4. The return of the itch or mange which is occasionally seen after the use of certain medicines, and is eagerly quoted as a proof against the theory of insects causing the disease, and considered as a proof that these complaints are diseases of the humours, ought rather to be considered as exceptions to the general rule.

5. It has been proved by well-authenticated experiments,

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that, by placing the itch acari on the human being, the horse acari on a healthy horse, and sheep acari on a healthy sheep, the itch, and mange, and scab, will after a certain time be produced; and that these diseases will increase or diminish in proportion as the insects are suffered to multiply or are destroyed. I will here cite an experiment first made by Walz, which I have frequently repeated, and which I consider as a very satisfactory proof of the insect theory. From the first appearance of mange on any particular sheep or horse, the animal was every day carefully examined, and every insect that was seen was picked out and destroyed: after this had been continued for some days, the disease healed of itself, while in other animals, attacked about the same time, and on whom this treatment was not pursued, it daily increased.

6. It is exceedingly probable from this, that the acari are the sole cause of true itch and mange, at least if these diseases arise from infection. The results of all the experiments hitherto made by inoculating sound animals with the matter taken from itch or mange sores shews it to be most probable that no other mode of infection or contagion exists.

7. Should any one, however, still believe that the disease is not produced by the acari, but by some matter which they carry away with them from the diseased animal on which they previously had existed, let him recollect this well-established fact, that, when fruitful female acari are placed on a healthy animal, a disease is produced which is not easy to be got rid of; but when male acari alone are placed on the animal, they produce only very slight traces of the disease, and which vanish of themselves with the termination of the life of the insect. Now were the acari only bearers of the matter of contagion, and not themselves the cause of it, would not the male insect be as efficient as the female?

8. Hence arises the following reply to the foregoing question:—

That the acari are only a product of the itch and mange, as descending from other acari; and that, in consequence of their power of producing these diseases, they must be considered as the real cause thereof.

MR. VINES IN REPLY TO SOME REMARKS OF THE EDITOR.

Sir,—I CORDIALLY join you in "hailing with delight" the formation of "The English Agricultural Society;" and it was chiefly for the public pledge, "to take measures for improving

the veterinary art," which its prospectus contains, and because I ardently hope for "the extension of our art to all its legitimate branches," that I became a humble subscriber to its funds.

In the general tone and tendency of the article on that Society, which appeared in your last number, I entirely concur; but there is a portion of it on which you will permit me to make a few observations in justice to myself. First, however, allow me to thank the writer for the compliments, much higher than I aspire to, which he has bestowed on me as "the late Assistant Demonstrator*," and which I am willing to believe sincere, although I may feel that I do not altogether deserve them.

It is stated in effect, in the article in question, and it is of that I complain, that "the strict and useful examination of the ox and the sheep, and the pig and the dog, and the bird," has not, and whilst I acted as Assistant Demonstrator could not, be pursued at the Veterinary College, agreeably to the "original" prospectus of that Institution, in consequence, as the article infers, of my incapacity or unwillingness, or both, to investigate such subjects.

Of my capacity it behoves me to say but little. What I have, others must judge of. But that I have always shewn willingness, nay, anxious desire, to investigate, the worst of my enemies cannot deny.

Suppose it should be shewn that I have done much more than was my duty, though less than was my inclination; that I have been censured by those who should foster and not check investigation, for teaching the pupils too much, and been charged with leaving others nothing to teach; that I have made scientific experiments, and published the results of them, which have never been controverted; that those experiments have been acknowledged, in the most flattering terms, by Sir Astley Cooper and other eminent medical practitioners; and that the fact of my having made such experiments, received those acknowledgments, and been the successful author of veterinary works (whilst others, highly remunerated, who ought to be capable and willing, have done and written nothing) has been the chief of the causes enabling you to speak of me as "the late" Assistant Demonstrator;—I should then, I presume, be, at least, allowed credit for willingness to investigate; and if envy (with which I have been pretty amply visited) were, as some contend, proof of the superiority of the person envied, I might make stronger claim to credit for capacity than I presume myself entitled to.

The causes which led to my being called "the late" Assistant

* I wish he had named *the* Demonstrator, and stated what it is that *he* ever did, does, or *can* demonstrate.

Demonstrator will be stated in due time, and the public will judge of them. It would, perhaps, scarcely be believed, if it could not easily and clearly be proved, that attempts have been made, and are intended to be repeated, to prevent pupils from attending a veterinary school which I am about to open. At present, I will trespass no further on your space than to request you, as a matter of candour and fairness, to insert this letter in the next number of THE VETERINARIAN.

THE VETERINARIAN, AUGUST 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

A SUB-COMMITTEE of veterinary affairs has been appointed by the English Agricultural Society. It would be irregular for us, at present, to publish any of their proceedings; but we may say thus far, that the interests of the veterinary art will not suffer in their hands. As soon as we can do it with propriety, a detailed account of all the proceedings of that sub-committee shall be given. A regular account of the *general* proceedings of the Society will be found in that increasingly useful periodical, "The Farmer's Magazine."

It is singular that, while an attempt is now making to establish at the London Veterinary College that extended system of instruction which its founders had contemplated, the professors of the Alfort School are replying to the charge of neglecting at their establishment every animal except the horse.

In the immediate neighbourhood of large towns the equine patients will always be more numerous than those from any other class of domesticated animals, and the attention of the professors and the students will be most frequently directed to them. The cattle, which constitute a considerable part of the riches of the agriculturist, are usually reared and fed at a considerable distance from these large towns, where the ground and its produce are comparatively dearer than in the country. The maladies with which they are attacked are generally of a more serious and fatal kind, or of a far more trifling nature than those

of the horse. If the disease is serious, and the animal is in good condition, the butcher is sent for rather than the veterinary surgeon. If the disease continues, the owner is daily losing something in the loss of condition in the animal; and if the patient dies, all is lost. The horse may generally be led for a considerable distance to the hospital of the veterinary surgeon; but the ox, the cow, the sheep, and the pig, in many cases, cannot be moved, and certainly cannot be sent far. The maladies which attack them are often so rapid in their progress, and they would arrive at their termination ere the patient could reach the infirmary. These are circumstances which necessarily limit the extension of the practical study of the maladies of cattle and sheep in a public infirmary—they are undeniable, and difficult to surmount.

The advocate of Alfort properly insists on these points, as offering some excuse for the comparatively few number of cases of disease in these animals which come under treatment in that veterinary school; but he adds, that the directors of the institution were aware that this must be the case, and, partly on this account, there always were in the pastures belonging to the school at least 400 sheep, 100 swine, and a variable but considerable number of horned cattle. We can attest the truth of this, for we saw there a flock of not-very-good Leicesters—a much better one of Merinos—a well-filled piggery, and several cows. The institution was also in relation with the owners of the principal dairies in the neighbourhood of Paris, and they afforded a great many subjects in the course of every year.

M. Delafond next gives the programme, and at very great length, of the course of lectures delivered at Alfort with reference to the diseases of these animals, and he had previously referred to some of the most valuable works that France possessed on the management and medical treatment of all the domesticated animals as emanating from the Alfort school: among them were those of Bourgelat, Chabert, Gilbert, Flandrin, Girard, sen., and last, but not least, the monthly "Recueil" of veterinary literature.

He has thus far carried his point, that the Alfort school has nobly struggled against the disadvantages entailed on it by its

position; and that a very considerable and satisfactory knowledge of medical treatment of cattle, &c., might be and was acquired at Alfort. If the other schools offered somewhat greater facility for the study of this branch of the veterinary art, fewer horses were probably admitted into their infirmaries, and a less satisfactory knowledge was acquired of the management of their diseases.

We will not now inquire what excuse the St. Pancras school will offer for its total abandonment of the principle on which it was founded, and the systematic confinement of the notice of the pupil to one animal alone; for the hour is now at hand when it will anxiously, zealously pursue another course—when its system of instruction will be worthy of the noble purpose to which it was originally devoted, and the whole country will hail the connexion, never, we trust, to be dissevered, between the English Agricultural Society and the Royal Veterinary College.

We turn, for a moment, to the letter from Mr. Vines, inserted in page 442 of this Number. We alluded, in the passage to which he refers, to that which was matter of universal observation and regret—not merely the absence of investigation and demonstration with regard to any thing but the horse in the College dissecting-room, but the systematic sneer or sarcasm with which the introduction of any thing else was visited. The repeated inculcation of the doctrine, that the knowledge of the horse was all that was required, and that he who understood the economy of the horse, and could treat his diseases, would not be at a loss with regard to other animals—it was to this, and the influence of this, that we objected. If we are wrong, some of the pupils, in properly attested communications, will set us right.

We are happy to hear other sentiments now avowed by Mr. Vines, and while he acts on them we wish him success.

We discharge a painful duty when we insert the trial of Fisher *v.* Matthews. Of the cause of the death of the horse there cannot be the slightest doubt—not the administration of an overdose of croton oil, but of some violent escharotic mixture, which had accidentally or carelessly been left in the bottle. Mr. Matthews's professional skill is not impeached; and it is evident that

he was altogether unconscious of the presence of the caustic in the medicine. In a moment of hurry or thoughtlessness a dirty bottle had been taken, the contents of which were probably unknown to, and their nature unsuspected by, his people. There was the source of the evil—carelessness; the easily besetting sin of too many of the veterinary surgeons' assistants, and too often of the veterinary surgeon himself. It is an evil against which every one who values the interests of his employer, or his own reputation, should sternly set his face. As much cleanliness and order should prevail in the pharmacy of the veterinary surgeon as in the best apartment of his house.

Our principal regret is, that Mr. Matthews could have been deluded to defend an action like this. Y.

The following Gentlemen have obtained their diplomas at the Royal Veterinary College:—

July 16*th*, 1838.—Mr. H. Boden, London; Mr. W. Ridgman, Launceston; and Mr. J. Stoddard, Richmond, Yorkshire.

July 26*th*, 1838.—Mr. P. Thrale, Croydon; Mr. W. A. Jackson, Preston; Mr. W. Hicke, Dover; and Mr. J. Kingsley, Deal.

Obituary.

Mr. WILLIAM HENDERSON, *Edinburgh.*

[We copy the following tribute to the memory of Mr. Henderson from a letter of Mr. Archibald Wilson, of Edinburgh. We were once only in the company of Mr. Henderson, at the house of our mutual friend, Mr. Dick. We were pleased with his evident kind-heartedness, and with the sound views which he entertained on many points of veterinary practice. His contributions to The Veterinarian did him much credit.—Y.]

I have just returned from fulfilling the last sad and melancholy office of conveying to the dark and narrow house appointed for all living, the remains of a friend and an elder-brother veterinarian, Mr. William Henderson, of this city. To the reader of The Veterinarian Mr. Henderson was well known, as most of his communications to that Journal were of the best and useful description. To every one of Mr. Dick's pupils he was always friendly—always ready to communicate information in the clearest and most kindly manner; and his place at the yearly

examinations will not be readily filled up. All who were acquainted with Mr. Henderson admired him for the varied and superior qualities of his mind, and the warm and benevolent feelings of his heart.

As a practitioner, Mr. Henderson has not left a better behind him on this or the other side of the Tweed; and a man with so kind a heart will not be found on either of the sides. Few men will be found that are willing to give themselves much trouble or inconvenience for the sake of obliging a friend, let his circumstances demand it ever so much. Not so Mr. Henderson; but from the overflowings of a generous heart he was often known to expose himself to considerable risk and serious inconvenience for the sake of obliging some needy friend. In the words of Goldsmith,

"His very failings leaned to virtue's side."

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

A Treatise on the Articulations of the Horse. *By* J. F. Rigot, *Chief of the Anatomical Works at the Royal Veterinary School of Alfort.* Paris, Bechet, Jun. 1827.

Nearly eleven years have elapsed since the publication of M. Rigot's work on the articulations: yet it has not, up to the present moment, received the slightest attention from the English veterinary press, or been considered sufficiently worthy of their especial attention in the form of a review. Taking into consideration the distinguished character of the author as an anatomist and a physiologist, it is much to be regretted that this one of his earliest literary productions should have so long remained buried in oblivion.

In his preface, M. Rigot distinctly states, that he does not offer the "Treatise on the Articulations" as the fruits resulting from his own labours, but more as a faithful narration of the lectures delivered on that subject by the learned Professor, N. Girard, whom the unsparing hand of death had cut off in the midst of a career of the most brilliant order, and in the very flower of his age. Considering the number of years that have rolled past since the death of that highly-talented young man, and the existing state of veterinary anatomical literature, it must be universally admitted, that the work in question reflects a high degree of credit on the school from which it has emanated. It is not, however, entirely devoid of imperfection; but some parts of the subject are treated in such a masterly style,

that we pardon the author for the omissions of which he has, perhaps accidentally, been guilty. The arrangement of the matter is most judicious, and meets with our entire approbation.

The contents of this little volume are divided into three parts. The first of which treats on the articulations in general, their classification according to their modes of junction and movement, the structure and uses of cartilage, fibro-cartilage, the ligaments, the synovial membrane, and the synovia. The second section gives a special description of each articulation; and the third is occupied in treating on pseudarthrosis, and the synovial tendinous thecæ. We will make allusion only to those parts of the subject which, either from their novelty or utility, may prove interesting to professional readers.

On a perusal of the remarks made by M. Rigot on the cartilages covering the ends of the bones that enter into the formation of the diarthrodeal articulations, it appears very evident that he doubts the veracity of the generally-received opinion of their being covered by a reflection of the synovial membrane lining the other parts of the articular cavity. Although he does not decidedly state that such is not the case, yet, from the tenor of his observations, we are led to conclude that his views of the matter are unfavourable to such a theory—for theory it is—it being impossible by maceration, or any other process used by anatomists for such purposes, to demonstrate the existence of a membrane covering the articulatory cartilages; excepting where a false one has been formed by the effusion and subsequent organization of lymph during some inflammatory action of which the articulation has been the seat. Time, and minute investigation have not, however, in the least changed M. Rigot's original opinion.

In his lectures, delivered at the veterinary school at Alfort, we have repeatedly heard him say, that he did not believe that the synovial membrane was reflected over the cartilages, and that his opinion would remain unaltered until he had ocular demonstration to convince him that it was erroneous. He very quaintly remarks, "If the cartilages do receive and are covered by a reflection of the synovial membrane, why have we not an increased vascularity of their surface when that portion of the membrane lining all other parts of the articulation is highly vascular, and labouring under the effects of acute inflammation."

Such are also the arguments of that excellent pathologist, Gendrin: they are weighty, and as such deserve our most serious consideration. It is, however, more a question of anatomical and physiological interest than one of pathological importance.

Nevertheless, we cannot dismiss the subject without bringing forward some evidence both *pro* and *con*. Beclard, in his Elémens d'Anatomie générale, as also does Bichat in one of his works, advances as a proof of the diarthrodial cartilages receiving over their surface a reflection of synovial membrane, precisely the same argument that Gendrin, Cruvelhier, Delafond, Rigot and many others use in endeavouring to prove quite the contrary; namely, the phenomena attending articular inflammation. Bichat states, that in inflammation of this membrane, when redness becomes visible, it extends on the circumference of the cartilage, but that it is less and less marked as it advances towards the centre—the membrane there identifying itself more and more with the cartilage; and that the cartilage is not coloured excepting at its surface. The same author also mentions, that that kind of degeneration of the synovial membrane commonly called fungoid, evinces itself equally on the cartilages as on the internal surface of the capsular ligament. Mayo, in his Elements of Physiology, says, that he has one preparation in which he accidentally succeeded in raising an uniform membrane from the cartilage covering the head of the humerus. In his work on pathology, he remarks, that where the synovial membrane is reflected over the cartilage, it is liable to become slightly thickened, opaque, easily separable from the cartilage, elastic, and brittle; and that, in one instance, he had seen it "for a small extent thickened, firm, white and soft on the patella, in connexion with sensible vascularity elsewhere on the patella and semilunar cartilages."

That the appearances described by both Mayo and Bichat are frequently met with in diseased diarthrodeal articulations, we do not for a moment deny; on the contrary, they are confirmed by our own observations of them. Nevertheless, we hesitate to concur with them in thinking such evidence sufficiently strong to prove the existence of a membrane covering the cartilages of a perfectly healthy articulation. We have never met with any membrane which was separable from the cartilage, that, on minute examination, we did not consider as an adventitious production. Often have we tried to demonstrate its existence in the healthy joint, but our efforts have invariably proved unsuccessful. In cases of open joints, it might reasonably be expected to find some trace of a membrane on the cartilage did there one exist; but we have never been enabled to detect any thing of the kind, excepting that which was evidently accidental.

In all the works of veterinary anatomy, both ancient and modern, excepting the one now before us, in treating on the stifle-joint, the writers describe three synovial cavities perfectly

distinct one from the other, having no communication between them.

In speaking of the articular cavity between the femur and patella, M. Rigot says that the synovial membrane is very extensive, and is not disposed in the same manner in all subjects, and that in some instances there is a free communication between this cavity and one, or sometimes even both, of those belonging to the femero-tibial articulation. These communications, when they exist, are to be found at the junction of the anterior with the posterior condyles of the femur. In some subjects there is at this place a small furrow, to which certain reflections of membrane are firmly attached, thus closing all communication.

M. Rigot asserts, that often-repeated examinations of this articulation have convinced him that this communication does not in any instance exist in young animals. Here we must differ from him, and widely; for although his observation holds good as a general rule, it is by no means without numerous exceptions. We have repeatedly seen these foramina both in young foals and in fœtuses.

Where it occurs in such very young subjects, the communication is not the result of a perforation in the mediastinal membranes, but of a small space between their border and the condyloïd isthmi of the femur. In nine-tenths of the aged horses examined, there will be found these foramina communicating between the cavities of almost every joint of the body, but more particularly in the stifle.

To M. Rigot is due the honour of having first publicly noticed this anatomical fact in the adult animal. It satisfactorily explains why some cases of opened stifle-joint are much more complicated than others.

We extract the following from the chapter containing a description of the articulations in general. The passage, though short, is valuable, inasmuch as it alludes to a subject which was lately the cause of a warm altercation between two highly talented veterinarians :—

"The synovial cavities appropriated to the same use as the articular margin (for the purpose of acting as reservoirs for synovia) and furnished in the same way with a synovial membrane, are sometimes placed on the side of the articulation, at others, on the articular surface. They are little sulci, of an irregular form, having their surfaces of a very pale pink colour. The inferior extremity of the humerus, and the anterior surface of the ulnar, present this sort of cavities. *One ought to be well guarded against considering them as abnormal denudations.*"

Here it is very evident that M. Rigot believes, with Professor

Dick of Edinburgh, that these excavations, so frequently met with in the tarsal, elbow, and other joints, instead of being abnormal productions, are placed there as "oil-wells or cisterns." How far they are right, we will not venture to say. Certain it is, that these sulci are to be found in almost every hock; but are they to be met with as frequently, and to as great an extent, in the young animal as in the adult? or even in the horse whose work has been moderate, as in the poor brute that has run through the different gradations of racer, hunter, tilbury-tit to some town swell, butcher's nag, and costermonger's pet? No; certainly not. We have, in a few instances, met with these excavations in the hock-joint of the fœtus. We will treat the matter more fully a little further on.

H. F.

[To be continued.]

Veterinary Jurisprudence.

THE CARELESS ADMINISTRATION OF IMPROPER MEDICINE TO A HORSE.

FISHER *v.* MATTHEWS.

This was an action brought by the plaintiff, Mr. Robert Fisher, junior, of Newport, solicitor, against Mr. Charles Matthews, who practises in the same town as a veterinary surgeon, to recover the value of a horse belonging to the plaintiff, which, as it was alleged, had died in consequence of the defendant having, by himself or servant, given improper medicine to the animal, or by the negligence and want of skill with which the same was prescribed or administered.

Thomas Sparks examined.—Is servant to Mr. Robert Fisher, senior: knows Mr. Robert Fisher, junior, the plaintiff in this action, who lives with his father. Plaintiff had a chestnut horse before April last; the horse had been out at grass during the winter; was brought up from grass in April; witness had seen him most days; he appeared in good health; remembered Cartwright (defendant's servant) coming to him on the 16th of April; he told witness he wanted him to assist him in giving a drink to Mr. Robert Fisher's horse: went with Cartwright to the stable; Cartwright put the twitch on the horse, and witness held it. Witness asked Cartwright why he brought a drink instead of a ball; Cartwright said Mr. Matthews sent that drink because the horse was a bad one to give a ball to. The drink was in a glass bottle; Cartwright gave the horse the drink out of a horn; one or two

hornsful were given to the horse; witness was then called away by Frederick Aubyn, another of Mr. Fisher's servants, and he left Aubyn to assist Cartwright. The appearance of the bottle inside and out was very filthy; witness returned to the stable in about twenty minutes; Cartwright directed him to give the horse some warm water in the course of an hour and a half or two hours, and a hot mash, and he did so, but the horse would not take either; he appeared to want to drink, but could not; his mouth and lips appeared sore and swelled; he put his lips to the water, but snatched them back as soon as he could; witness did not see him swallow a mouthful. Witness afterwards took him a hot bran mash, but he was not able to eat it; witness put his finger to the skin of the mouth at night—it appeared swollen and sore; witness saw the horse again between six and seven on Tuesday morning, the 17th; he seemed very bad, and very badly swelled; witness rubbed his hand down the horse's mouth, and the skin all stripped off; witness saw the horse about six o'clock on the Wednesday morning: he then appeared very full of pain, and looked very drooping; saw Mr. Matthews there about nine o'clock on the Wednesday; the horse was taken out by his direction; the horse was led out about a hundred yards; defendant then ordered the horse to be stopped, and turned round very carefully: defendant was afraid of the horse falling, he appeared so weak; defendant told witness to take the horse very quietly to the stable, which was done; Matthews then said he had given him fifteen drops of croton oil in his physic, and it had killed him, and he would be a dead horse; witness asked him if he had ever given fifteen drops of the oil before; defendant said he had given a horse as much again; defendant also said he wished the horse had been at the devil before he had given it to him. Mr. Matthews came backwards and forwards to the horse that morning every half hour, for two or three hours; defendant said several times the oil had been too much for him; he repeated that the oil had killed him, and he would be dead. The horse died about eleven or twelve o'clock on the Wednesday morning. In witness's opinion, the horse was unable to swallow on the Tuesday; did not see him swallow any thing; saw on Wednesday morning the horse had rubbed his hind thighs very badly; the horse did not cough at all while the medicine was being administered. Mr. Matthews came on the Tuesday night, and directed the groom to oil the horse's mouth and nose well; the horse was in a loose box, and there was no other horse in the box with him.

In cross-examination, witness said the horse had been puffed in his two hind legs; did not perceive that he had a spavin; he had been blistered many times; he had been fired in the two hind legs, and had been sent out to grass after.

William Shuker examined.—Is coachman and groom at Mr. Fisher's; the horse in question was a fine-looking horse, had very good action, and was very gentle. Mr. Robert Fisher directed witness to go to Mr. Matthews, on Sunday, the 15th of April, and tell him to send a ball for the horse next day;

he did so; this was done; witness went out with the carriage on Monday morning; on his return found the horse very sick; did not think much of it at the time, because horses are generally sick after physic; saw the horse about five next morning (Tuesday); the mouth was much swollen, and the skin came off on the hand being applied to it; tried the horse with a little chilled water and some mash, but he would not touch either. Witness then told Mr. R. Fisher how the horse was, and he directed him to go for Mr. Matthews; he did so; defendant came to the horse, and before plaintiff came into the stable defendant said he saw what had done it. Mr. Robert Fisher came to the stable, and said, "Why, Mr. Matthews, what a mess you have been making of this horse for me." Defendant said, "Oh no, Sir, I see what it is that has done it; it is about ten drops of croton oil I had left in the bottom of a bottle that I had been giving a cow-drink out of the day before." Plaintiff said, "Why the devil don't you rince your bottles, and keep them clean." Defendant said, "Because I did not think such a little would have taken such an effect." Plaintiff said, "Now, I want to get the horse into condition, and you have thrown him out for a week." Defendant said, "Oh no, Sir, not for a day; it will be all off to-morrow, you may depend upon it." Plaintiff said, "What is the reason you did not give him a ball?" Defendant said, "Because he is such a bad horse to give a ball to: I gave him a drink to operate sooner than a ball."—[Witness then proceeded to state that throughout the day he tried the horse with gruel, mash, &c., by defendant's directions; but the horse could scarcely eat or drink any thing, and at night appeared no better.]—Saw the horse at a quarter before six on Wednesday morning; he appeared no better; he had rubbed himself across the thighs, and appeared to have suffered great pain. Witness's master came with Mr. Robert Fisher and Mr. Matthews to the stable. Mr. Fisher said to defendant, "What have you been doing to this horse?" Defendant said, "Oh, I see what it is that has done it: it is nothing but about fifteen drops of croton oil I had left in a bottle, out of which I had been giving a cow a drink the day before." Defendant was backwards and forwards that morning, and said, between eight and nine o'clock, the horse would get over it; defendant bled the horse; the blood looked very black; the horse had not been purged at all by the mixture.

Frederick Aubyn, another of Mr. Fisher's servants, confirmed the testimony of the preceding witnesses.

Robert Fisher, Esq. examined.—The horse in question was bought by my son in 1832. I think any man would have given £40 or £50 for the horse; he was a fine horse to look at, and a good one to go. On being informed that the horse was very ill, I went to the stable; found Mr. Matthews there; I thought the horse was at the point of death; I said, "What have you been doing to this horse to throw him out of condition, he will be dead." Mr. Matthews said, "Oh no, he will be better soon." I then said, "Why, look at him; he will be dead." Defendant said, "I only gave him fifteen drops of croton oil and some aloes;" he also said something about a cow drink, but I do not recollect what. On that I looked more attentively at the horse;

the mouth, upper and lower lips, and under the chin, were all swollen and scabby, as if the skin would peel off; it appeared all excoriated. I said, "You must have been giving him something of a burning oil, and it will kill him, for he can neither eat nor drink." Defendant said, "Well, I admit what I have given him must have done it; but I cannot tell how it is." The effect appeared to me as if oil of vitriol or aquafortis had been given to the horse; he did not appear capable of eating. The horse had rubbed his hind legs and thighs as if in great pain; I saw him dead within two hours after.

Cross-examined.—Mr. Matthews had considerable practice; I had great confidence in his skill, and so had my son.

Mr. Edward Hickman, of Shrewsbury, veterinary surgeon.—I examined the horse on the 19th of April; found the external parts of the lips a good deal excoriated, and of the mouth also in some measure; examined the windpipe; found the larynx in a state of inflammation; the bronchial tubes were much inflamed, particularly at the lower part of the windpipe. I have never given croton oil in my practice; I consider it a dangerous medicine, unless very cautiously administered; it must have required some acrid or burning substance to have produced the effect visible upon the horse in question. If croton oil and aloes had been administered, and had passed into the stomach, I think it could not have produced the effect seen in this case; the whole of the abdominal viscera appeared healthy. Mr. Matthews was present when I made the examination.

Cross-examined.—Croton-oil is given as a purgative; it is used by some eminent men in the profession; I have seen Mr. Percivall's book on the treatment of horses,—it is a standard work in the profession. in ordinary cases, inflammation of the larynx would not have produced death in two days, but in extraordinary cases it might do so; from the entrance of the œsophagus down to the bowels all was in a healthy state. I found an adhesion of the colon, which must have been produced by some degree of acute inflammation at a former period. There was no appearance of an unhealthy kind from the lips to the glottis.

Mr. Charles Spooner.—I am a veterinary surgeon in London, and have a private school, adjacent to the Veterinary College, where I teach anatomy and physiology; have heard the evidence given in this cause; if any portion of the draught had "gone the wrong way" when administered, it must have produced coughing, and other symptoms of distress, that could not have escaped the notice of those present. I am acquainted with croton-oil; in its action it is highly purgative; if it had been administered in a properly diluted form, I think that it could not have produced the effects that have been described. I think, from what I have heard in evidence, that the death of the horse must be attributed to the medicine which was administered.

Cross-examined.—The effect of croton is that of a severe drastic purge; I do not give it in my practice; Mr. Field, who is one of the first practitioners in London, does administer it; in my judgment, the immediate

cause of death in this case was inflammation of the larynx, trachea, and lungs; the average dose for a horse is from fifteen to forty grains of croton farina; five drops of croton-oil are fully equal to a drachm of aloes; the dose of aloes is from four to eight drachms; I agree with Mr. Hickman in his opinion that Mr. Percivall's book is a standard book on the treatment of horses.

Re-examined.—I think the quantity of croton oil stated to have been given could not have produced the effects shewn in this case; in my judgment it must have been some other mixture that was administered; I think croton oil, if not properly diluted with some bland fluid, might have produced external excoriation; if properly diluted, it would not. I think the effect shewn in this case must have been produced by some medicine that was not croton oil, unless a much greater quantity than fifteen drops had been administered.

Mr. Joseph Phillips, of New-Lodge.—Was quarter-master of the troop of yeomanry in which Mr. Robert Fisher is cornet; knew the horse in question; it was a very fine horse, with good action; in my judgment it was worth from £40 to £50.

Cross-examined.—If I had known the horse to have been fired and spavined, and fourteen or fifteen years old, it would, of course, reduce his value in my estimation.

This was the plaintiff's case.

Mr. Richards (with whom was Mr. Lee) then addressed the Jury for the defendant, and contended that the evidence was such as to prove clearly that the death of the horse arose from inflammation of the larynx, &c. which could not have been produced by the medicine administered, unless some of it passed the wrong way and caused irritation and consequent inflammation, and in that case it was an accidental circumstance, for which the defendant was not liable, and whose general skill was best evidenced by the fact that plaintiff and his father had employed him in his profession for a long series of years.

The learned Judge summed up, and in doing so observed, that the defendant would not be liable in this action if they believed the death of the horse to have arisen from inflammation caused by natural causes or by the medicine having some of it gone the wrong way; nor if they believed it to have been from any accidental or inadvertent administration of medicine not suitable to the complaint: to be justified in finding a verdict for the plaintiff in this action, they must be satisfied that the death of the horse was occasioned by the want of skill in not administering proper medicine, or by unskilfully or negligently administering the medicine if it was proper: this unskilful or negligent administration might be either by the defendant or his servant, for whose acts he was liable, provided that the Jury were satisfied that such neglect or want of skill existed.

After consulting a short time in the box, the Jury returned a verdict for plaintiff, with £10 damages.

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ANIMAL PATHOLOGY.

By Mr. YOUATT.

LECTURE XXII.

The preventive Measures continued—Are there Medicines which will prevent the Development of the Disease?—The Box—Alismo Plantago—Belladonna—Scutellaria—The Danger of the use of Preventives.—The Treatment of Rabies—It is a State of excessive nervous Irritation—Can this be allayed?—Depletion considered—Injection of warm Water into the Veins—The transfusion of Blood—The injection of certain Fluids into the Veins—Medicines—The Box—Alisma Plantago—Belladonna—Scutellaria—Guaco—Veratrum Sevadilla—Ticunas Poison—Other South American Prophylactics—No instance of Cure in the Lecturer's Practice—Caution—Encouragement.

IF the present lecture should be somewhat unsatisfactory you will at least have this consolation,—that it will be the last with which I shall trouble you on the subject of rabies. The knife and the caustic are most valuable preventives, and thousands have been rescued by them from otherwise certain destruction. In the present state of medical knowledge, with relation to this disease, that surgeon would be altogether without excuse who hesitated to have recourse to them, or to apply them with all the severity which the case seemed to demand; and he who has unfortunately been bitten, should muster all his courage, and submit to the application of them. He will not find the operation half so painful as he feared.

But, let the knife or the caustic have been freely and skilfully applied, can the medical man be sure that every portion of the wound with which the virus could by possibility have come in contact has been destroyed? Can the surgeon, partial to the knife, be certain that inoculation of the old wound, or the surface of the new one, may not have been effected by the very

operation which he has performed? The plain matter of fact is, that both the knife and the caustic have failed in the most skilful hands, and the former oftener than the latter. Not many months ever pass without some record of a death from hydrophobia, although the patient had submitted to the usual and the best surgical treatment.

In many cases of severe and lacerated wounds, which bid defiance to excision, and can scarcely be fathomed even by the caustic, the humane and honest surgeon will often painfully reflect on the possible melancholy issue of the affair. He will identify himself with the feelings and apprehensions of the family and friends of his patient; and while he will place much confidence on the attempted destruction of the part, he will look anxiously around him for some subsidiary measure which shall make assurance doubly sure.

Are there any *preventives*? I know that I am treading here on dangerous ground. There are plenty of these preventives, if the advertisements of the quack or the firm belief of the peasant can be depended upon. Indeed, the principles and the practice of legitimate science acknowledge the possibility of their existence. We inoculate with vaccine matter, and we obtain, for awhile, an immunity from small-pox. The poison of measles has been received into the frame, and the system is fully impregnated with it. The patient, accidentally or by design, is inoculated with the variolous matter while the eruption of measles is thick upon him. The second poison is perfectly inert until the first has run its course, and then it assumes all its wonted activity. Then, are we able so to modify or change the connexion or action of certain parts, or can we bring the constitution generally into such a state that the influence of the rabid virus may be successfully resisted?

This is a very important inquiry. It is that on which the efficacy of every preventive measure is founded, and, to a certain extent, it is confirmed both by theory and practice.

Rabies is an affection of the nervous system. Is it possible, by the exhibition of some diffusible stimulant, whose power of excitement may be considerable and permanent, and its sedative effect slight and transient, and whose principal action is on the nervous systems—is it possible to maintain a constant excitement of them until the virus is worn out? or may a gradual change or modification of the nervous system be produced, so that it shall not be susceptible of the influence of the virus?

These were the questions that I was accustomed to ask myself, and which induced me to put to the test all the supposed preventives whose composition I could ascertain; and I

perfectly satisfied myself that many of them had power, and to a very considerable extent.

Mr. Blaine had satisfactorily ascertained that the common Box was the basis of the preventive drinks that had acquired so much reputation in Hertfordshire and Kent. Some rue entered into the composition of the drench, but the box was the principal ingredient. Its bitter and nauseous taste would induce the suspicion that it possessed some powerful medicinal virtue. It was evidently a narcotic. The human patient always experienced considerable giddiness for half an hour after taking it, and the dose for the dog was regulated by the degree of staggering and distress which it produced. Several of them were destroyed by an over-dose. The rue also is an acknowledged antispasmodic, and exerts its chief power on the nervous system. This compound was undoubtedly a preventive. Very few dogs bitten by a rabid dog, and no preventive measures being taken, escape; but the decided majority of those who were drenched with this mixture never exhibited the slightest symptom of rabies. Beyond this, however, we could not go. We saved the majority; but we had no effectual security.

The Alisma Plantago is a decided sedative. I experimented on it to a considerable extent, and was satisfied that it had effect, perhaps more than the box; but it was not the preservative which it was asserted to be.

The Belladonna followed, and it also had power, but no absolute dependence could be placed upon it. So it was with Dr. Spalding's Scutellaria Lateriflora. Its effects on the cerebral system were singular. I repeatedly took an infusion of it, and the consequence almost invariably was a feeling resembling the pleasing exhilaration of incipient intoxication, rapidly changing to a giddiness not quite so pleasing, and the whole passing off in eight or ten minutes, and leaving no exhaustion or depression. It was certainly more efficacious than either of the others; but instances of palpable failure too often occurred. I combined these medicaments in various ways; but I could never get any thing approaching to a specific.

The end of the whole was, that I gave up these experiments altogether. I could not discover any simple or compound medicine on which full dependence could be placed. I also began to feel that by these continued experiments I was exposing myself and my assistants to a degree of danger which could not be justified—I was likewise beginning to produce a dangerous state of mind in some of those about me. They saw that these medicaments had power—that, probably, we saved quite as many dogs as we lost; and they began to cherish a faith in them that threat-

ened to lead to a disinclination to have recourse to the far surer preventives, the knife or the caustic. In some persons, aware of the experiments which I was pursuing, and anxious to add the lesser efficacy of the drench to the more powerful one of the caustic, there began, after awhile, to arise a distrust of both. A state of nervous irritability likewise occasionally ensued, the possible consequences of which I dreaded to consider. I knew how much depended on the mind. I knew the importance of inspiring the patient with perfect confidence, and banishing from the memory, as much as possible, the record of that which had passed. The daily drenching precluded this; and I feared what dreadful power an irritated and unhinged mind might give to the minutest particle of the poison that might perchance lurk in the wound.

And now, gentlemen, I approach, and with diffidence and reluctance, the last and the most important division of our inquiry, *the treatment of rabies when it is unequivocally developed.* In the great majority of cases prudence and humanity will dictate the immediate destruction of the animal. There are but two motives that will justify any delay. If mischief has been done—if a human being or any valuable animals have been bitten, and it has become necessary to have recourse to painful preventive measures, it may, for the sake of the practitioner and of the patient, be advisable to commit the dog to close and safe confinement, in order that the appearances after death, corresponding with the symptoms during life, may justify these precautionary means. The reputation of the practitioner and the satisfaction of the patient may demand this.

The human or the veterinary surgeon may also be justified in delaying the destruction of the animal in order to experiment on the effect of certain medicines or operations. This is a noble but a fearful object. Ever would his memory be revered who discovered a cure for rabies; but his laurels would be won at extreme hazard, and the most perfect self-devotion to the cause of science and humanity could alone induce him to pursue his dangerous path. Having now retired altogether from veterinary practice, I may be permitted to say, that the countenance of the government of the country might be given to many less worthy objects than the attempted discovery of a cure for rabies. I do not think that there would be much difficulty in discovering the man who would honestly devote himself to such a pursuit, and, perhaps, I have him in my mind's eye.

The true nature of rabies has been sufficiently established in the course of our inquiries. *It is a state of excessive nervous irritation, commencing with the motor nerves of organic life,*

speedily involving the cerebral system, and rapidly exhausting the powers of nature. Then the object of the practitioner, whether human or veterinary, would be to allay, if possible, this dreadful state of excitation: to that point, and to that alone, his attention should be primarily directed.

The first weapon would be depletion, and carried to its fullest extent. The vessel selected would be the jugular vein in the quadruped: the incision would be large, and the blood would be suffered to flow not only until a manifest change was produced in the action of the heart and arteries, and syncope supervened, but, the circulation beginning to return, the bleeding would recommence, and a second and longer fainting ensue. It is painful, however, to record the little permanent effect which even decisive treatment like this produces.

A dog weighing about ten pounds, and evidently labouring under rabies, was subjected to copious venesection in my hospital. About six ounces of blood were first abstracted; when he fainted, and scarcely rallied again for many an hour. On the following day he was again bled to syncope: four ounces alone could be abstracted. On the third day there was manifest but deceptive improvement—he ate and drank, and was gentle and tractable; but towards evening the eyes closed and the head drooped, and the husky guttural sound in the throat returned, and he should have been bled again; it was delayed, however, until the following morning, when five ounces more of blood were abstracted. He did not rally after this depletion, but died in the evening.

This was the first experiment on the power of bleeding—others were afterwards made, with more system and with more decision. The result was uniform—the symptoms were invariably mitigated, but the dog died.

The same result has attended the adoption of venesection in the human being. It is of very ancient date, and it has been often resorted to in modern times. Bolingall mentions six cases in which the patients were bled *ad deliquium animi,* without any better result than temporary alleviation of the symptoms. Dr. Rutherforth abstracted sixty-six ounces of blood from one patient, but he died.

It had been imagined that the injection of warm water into the veins might have a more decided effect. This was put to the test of experiment. A white terrier, undeniably rabid, was the subject of the experiment, and which was conducted in my hospital by Mr. Mayo. About seven ounces of blood were taken from the jugular vein, and nearly the same quantity of warm water injected. The dog struggled violently, so that the exact quantity abstracted and injected could not be ascertained; but it was

at least seven ounces. During the process of injection the animal heaved convulsively, and was very sick. The difficulty of breathing increased—it was painful to behold. In order to relieve it, and as another interesting experiment, the anterior portion of the third ring of the trachea was removed, but without any marked advantage. I would rather say, that the labour of respiration was aggravated. On being liberated, he appeared to be very much weakened—he sat on his haunches leaning against the wall, and his fore-paws continually slipping from under him. I watched him during two hours. He was gradually sinking, and he was found in the morning nearly slipped down, his head resting on the ground, and quite dead: he must have died without a struggle.

Magendie conducted a similar experiment. His patient was a large mastiff. He laid bare the jugular vein, and, making an incision into it, abstracted about a pint of blood, while at the same time, through another incision situated lower down in the vein, he introduced warm water. On the whole, beside the pure blood that was taken away, there escaped about ten or twelve ounces of mingled blood and water. The dog, that before the experiment had been exceedingly violent, was now quite calm, and on being liberated curled himself up as it were to sleep; but he did not close his eyes. Five hours after the injection he began to suffer great difficulty of respiration, which continued to increase for half an hour, and then he died. During the whole of the previous time he was altogether calm. He was destroyed, as was the poor terrier whose case I have just related, by infarction of the lungs, the whole tissue of which was filled with aqueous blood.

In one case I had recourse to the transfusion of blood. The patient was a large mastiff bitch, with dumb madness, and tolerably manageable. Eight ounces of blood were withdrawn, and replaced by nearly a similar quantity of that fluid from another mastiff that I happened to have at that time in my hospital. A slight shivering fit immediately followed the transfusion, and this was succeeded by increased brightness of the eyes, and, as I thought, a slight retraction of the tongue. The breathing was quickened—it was to a certain degree laborious; and the pulse was accelerated eight or ten beats in the minute. In less than six hours this had all passed over, and she was evidently weaker than before the experiment.

Ten hours after this experiment six ounces more of blood were withdrawn, and replaced by nearly an equal quantity from the dog that furnished the fluid for the first transfusion. The countenance again brightened, and the respiration and the pulse were

quickened; but this was evanescent, and on the following morning she was dead. I had anticipated this result, for it was too essentially a nervous disease to yield to the change of a small portion of the vital current.

The same experiment, and with the same ill success, had been made on the human being. Dr. Dieffenbach, of Berlin, had a patient evidently hydrophobous. The usual means had been tried, but these having no effect, and his state becoming worse, transfusion was resolved on. After a bleeding of twenty-four ounces twelve ounces of blood were at two different periods injected.

At each injection the pulse rose and became regular, and, after some time, the dread of fluids seemed to diminish. In the evening the patient had some shivering, and was feverish. On the next day he was bled to thirty-two ounces, after which twelve ounces were slowly transfused, but without any effect. On the following day the patient had considerably changed—his face was pale, his eyes glassy, and the dread of water so violent, that he was taken with shivering at the mere sight of it. In the afternoon, after a bleeding of six ounces, five ounces of blood were again injected. Immediately after the operation he drank some water, but died in the course of an hour, in violent convulsions.

The object of the practitioner is to allay, if possible, that state of excessive nervous irritation which constitutes the character or the essence of this dreadful disease; but, unfortunately for him, just in proportion to the morbid excitement of the system the most powerful medicines often seem to lose all their influence. One grain of the aqueous extract of opium injected into the veins of a healthy dog will produce a sleep of some hours' duration. Ten grains have been injected into the veins of the rabid dog without the slightest narcotic effect. It is said that Dr. Babington administered 180 grains of opium to a patient without any benefit, and even without procuring sleep. Even prussic acid has been injected into the veins of the rabid dog without causing any perceptible relaxation of the symptoms. I am ashamed to say, that, among my numerous patients, I never had recourse to the injection of powerful sedative medicines into the veins. I know not why it should have been so, and I now regret it; but I believe that almost every prophylactic that could be administered by the mouth was, at some time or other, put fairly to the test.

The Box seemed not to have any power either in decoction or in extract.

The Alisma Plantago had great effect. A coach dog belonging to the Sardinian Ambassador was rabid, and dreadfully ferocious.

With some difficulty, however, I contrived to give him two drachms of the powdered root, suspended in mucilage. He was evidently quieter. Six hours afterwards the dose was repeated. The desire to do mischief altogether ceased, and a torpor amounting to almost paralysis succeeded, and he died in twenty hours after the second dose. About the same time I administered the same drug to another dog, rabid and ferocious. His ferocity was subdued, and the disease was protracted; but he died. At other times the alisma did not produce the slightest effect. This was the case with almost all the sedatives to which I had recourse. The best marked case of the power of the alisma was that of a dog belonging to a lady well known at that period,—Mrs. Hodges, of four-in-hand celebrity.

Feb. 13, 1819.—Her spaniel had for two days refused his food. He had become exceedingly irritable—he lapped his own urine—and uttered the characteristic howl—he was indubitably rabid. He was brought to me early in the morning, and at nine A.M. two drachms of the powdered alisma plantago were given to him, suspended in mucilage. For an hour he continued restless, and howling as before; but about noon the howl had changed to a fainter sound, resembling a whine, and the dog was sitting on his haunches, quiet and depressed. At two P.M. the dose was repeated. He struggled against it, and, from partial suffocation or exhaustion, he fell on his side, stretched himself out, and appeared as if he were dying. He soon recovered, and, half an hour afterwards, I found him quietly seated as before. His breathing was less laborious—his whining had ceased—the wildness of his countenance was gone; he wagged his tail when spoken to, and arose and came slowly towards me. He refused to eat, but lapped, and seemed to swallow a little water; and I saw him void his urine, and turn from it without lapping it. At seven P.M. he was sitting quietly, but his muzzle hanging as low as his elbow. He recognized me, and faintly wagged his tail. Another drachm of the alisma was given: he again struggled, and seemed to be dying, but in ten minutes he resumed his sitting posture. I saw him in this situation at ten o'clock, but at six on the following morning he was dead.

A fair trial was given to the Belladonna, which was said to have been very successfully used on the continent. The most violent symptoms were almost invariably mitigated, but rapid exhaustion followed, and frequently paralysis. The ferocity of the animal generally ceased, but he died about the usual time.

To this followed the Scutellaria Laterifolia of Dr. Spalding. I was at some pains to get it genuine, but in no one instance

was it successful. It lulled the irritability of the dog; it not unfrequently sent him to sleep; but he died completely exhausted, and almost paralytic.

Mr. Cæsar Hawkins had the kindness to try the effect of the South American Guaco on a dog in my hospital. The lower jaw was dependent, the tongue black, the breathing hoarse and grating, and the true rabid howl was heard almost every minute. About half an ounce of the expressed juice of the Guaco was given in the afternoon, and a second dose in the evening, with some slight relief of the symptoms; but, after the third dose, on the following morning, the change was most extraordinary. The dog recovered to a very considerable degree the use of the jaw, and could not only masticate the food when put into his mouth, but could with tolerable ease pick it from the floor. The howl ceased, and the restlessness disappeared. We were surprised and pleased, and almost began to think that the grand specific was at length discovered. The medicine was continued during the day; but on the next morning the dog was found breathing slowly, with every limb paralyzed, and, presently afterwards, he died.

The Guaco was afterwards given, at St. Thomas's Hospital, to a young man evidently hydrophobous. He experienced some slight and temporary relief after every dose; but he died.

About the same time Mr. Hawkins tried the Veratrum Sevadilla, regarded in South America as a specific in the cure of rabies. We administered four times the quantity that was said to cure the disease, but not the slightest effect was produced.

Mr. Morgan having kindly given me some of the Ticunas poison, I inoculated a rabid dog with it, in order to see what effect one poison might have in weakening or destroying another. Although not ferocious, the animal had been in a considerable state of excitation. An incision through the integument was made on the inside of the arm, and a pointed bit of wood that had been dipped in the poison was rubbed on the exposed fasciæ. No effect being produced, the same bit of wood was introduced into an incision more deeply made. In less than two minutes the dog was more tranquil, and at the expiration of five minutes he dropped motionless, the only indication of life being a regular and not laborious breathing. In this state he continued eight hours, when I left him for the night. On the following morning I found him dead.

Sir Anthony Carlisle gave me the opportunity of testing another South American cure for hydrophobia, prepared from a plant of the cactus family. It produced a considerable degree of temporary excitement, I might almost say insanity; but this

passed over in the course of a few hours, and the disease pursued its fatal course. It was also, about the same time, given to the human being without effect.

And now, gentlemen, I have told you nearly all that I know respecting rabies. I have seen some palpable cases of spontaneous recovery. I have seemingly gone a great way towards effecting a cure, but I never fully accomplished my purpose. I hope that I may have contributed to prevent the appearance of the disease in a great many patients; but I have never cured one. Others have, or say that they have. Spalding has cured nearly eight hundred with the Scutellaria—Brera has succeeded with the Belladonna—and Blaise with mercurial inunction. I dare not say, I do not believe, that they are designedly imposing on the public by fabricated or false accounts; but such has not been my good fortune, although I believe that I have experimented on more animals than any other practitioner in any part of the world. I have seen again and again decided good impression made upon the disease, but the cure has not been worked out. The subject should not be dropped. The nature of the disease is fully known—the kind of medicines to be employed are sufficiently indicated—and I have no manner of doubt that the successful treatment of rabies will ere long be discovered. This will, indeed, be one of the noblest triumphs of medicine. It is one that seems especially allotted to the veterinary surgeon. He sees the disease in all its various forms in the animal that is most frequently the subject of it. His daily practice teaches him the way of coercing and managing this animal, a struggle with whom might be fatal to others. I need not tell you how well *he* would deserve of his country, by whom the successful treatment of rabies is discovered, and with what blessings his name would be hailed. Let this be your path—cautiously but confidently trodden. It will conduct you to the deserved estimation and gratitude of your brethren and the public.

CASES OF PRESSURE ON THE MEDULLA SPINALIS, FROM EXCESSIVE HEAT OF THE SUN.

By Mr. John Tombs, *Pershore.*

July 7th, 1837.—I was desired to visit two entire cart colts, belonging to a highly respectable agriculturist in this neighbourhood. When I first saw them, they were grazing in a meadow contiguous to a large wood. They were exposed to a grilling sun; it was a perfect calm, and the ground was like a hot-bed. When I approached them, they began rolling, swerving, and

staggering about, as though their backs were badly rigged. The one, a red roan colt, had been observed to stagger as he walked two or three days before. He could not now stand sufficiently quiet to graze; his hind parts were perpetually rolling right and left. When he was driven along, I thought he would have been precipitated head foremost into the river Avon (forming the western boundary of the meadow in which they were), having lost the proper command of the voluntary muscles of the body. The other, a blue roan colt, was attacked this morning: he swerves a little. They were driven home and housed with some difficulty; being unbroken, wild and awkward. I could not correctly judge of the state of the pulse, they were so intractable and excited. They were both bled, and had a solution of aloes given them.

8*th*.—They have had halters on all night, and are more tractable and composed. The red roan has amaurosis, and staggers very much, evidently indicating too great a determination of blood to the brain and medulla spinalis, and caused by the intense heat of the sun. The blue roan to-day staggers as badly as the red one: the pulse of the former is sixty, and hard; and of the latter seventy, and wiry. Their bowels are constipated. The treatment was repeated—venesection, and Barb. aloes in solution.

9*th*.—Respiration disturbed—bowels sluggish—pulse of both sixty, and hard. I bled, and gave laxatives, and applied sheep-skins reeking hot to the loins. Their diet was bran mashes, which they ate voraciously, and in a very peculiar manner, from the imperfect action of the muscles of mastication.

11*th*.—They stagger exceedingly—the pulse forty, and soft—the breathing tranquil—the perspiration is running off their backs down the legs, from the influence of the sheep-skins. Remove them, and wash their backs with tepid water. The bowels are relaxed. Give digitalis and tartar emetic.

13*th*.—No visible improvement in either of them. The blue roan's tail is erect, similar to that of an animal with tetanus. Give aloes, digitalis, common turpentine and nitre; and stimulate the loins.

15*th*.—The red roan is much the same, with the exception of the pupils being contracted. The action of the posterior extremities is quite involuntary, inducing me to fear an effusion between the theca vertebralis and the spinal marrow. I applied a stimulating charge along the back bone, from the superior part of the scapula to the gluteal muscles. The blue roan is considerably improved. Continue the stimulus to his loins—repeat also the nauseating medicine.

18*th*.—The red roan swerves less. The blue roan's extremities are swollen, but the rolling motion has nearly disappeared. Turn them out in the daytime.

20*th.*—Both vastly better. Their bowels are regular, and pulse at the natural standard. Apply a charge to the blue roan, and turn them out altogether.

From this time to the 1st of August they progressed surprisingly, and on the 8th I again saw them: they appeared quite recovered, and were as fat as porpoises.

August 16*th.*—I was summoned in great haste to attend the red roan. I found him much in the same state as he was when originally attacked. He was staggering about like a man beastly intoxicated, and had amaurosis. There was some fever—the pulse sixty, but the appetite was good. Bleed to syncope, and give physic.

18*th.*—Much the same. Give small doses of aloes and digitalis.

23*d.*—Great improvement,—a trifling staggering gait. Blister the back extensively.

September 1*st.*—The swerving motion slightly perceptible. Turned out.

20*th.*—Still too much lateral motion. Repeat the blister.

November 27*th.*—Can walk perfectly upright.

April 1838.—Both colts are quite well, and at plough.

I had two similar cases at the same time: the one a mare giving suck, and the other a waggon horse. They both recovered in a few days by copious bloodletting and powerful purgatives.

These complaints are not frequent in England; but I have seen a disease very much resembling it, and very frequent in India. It is termed Kumree.

A CASE OF EMPHYSEMA OF THE NECK, BREAST, CHEST, &c., IN A HORSE.

By Mr. W. A. Cartwright, *Whitchurch.*

Mr. Cookson, sen., of the Woodhouses, lent his grey cart-horse to his son. He was in good condition—I may say fat—and had about twelve months ago been castrated.

June 7*th*, 1838.—Between five and six in the morning, the horses were fetched up. They galloped about very much, and snorted a great deal. He, amongst others, was then put into the stack-yard for awhile. Soon after he took a sort of bounding deer's leap on all fours; then all of a sudden stopped, humped his back up, and was very stiff. The front and sides of his neck were puffed out instantly to a great size, and the swelling presently extended all over his breast, shoulders, and the lower

parts of the thorax: the whole of this swelling was caused by the effusion of air.

The son, as soon as possible, took six or seven quarts of blood from him, but had some difficulty in finding the vein. He was kept in the stable all day, and at night was sent home, a distance of four miles, to his father's, who, finding his respiration too quick, took five quarts more blood from him.

8*th*.—Mr. C. came and informed me of the circumstance. I could not then go to him, but I sent three alterative balls, one to be given night and morning.

9*th*.—I saw him, and found him nearly as Mr. C. had told me; but who now said that he was not so bad as he had been. He had on the front of the neck, about eight inches from the breast, an enlargement of the size of one's fist, though more flattened, with the appearance of there being effusion beneath, but which did not pit under the finger. It was slightly sore and inflamed, and there was but little emphysema mixed with it. It was not attached to the trachea. The breathing of the horse was natural, and I could not detect any opening into the trachea. I ordered the neck and breast to be fomented, and the horse kept up, and fed on mashes and grass.

14*th*.—I again saw him, and found that the emphysema had been absorbed gradually, and there was scarcely any to be felt, except about the breast, where it still remained in a considerable degree, the skin being loose. The tumour at the front of the neck was less, but very distinct, and altogether unconnected with the trachea. It was certainly more tender, and he shrunk on my pressing the windpipe there. The respiration was natural. He has been worked a little. I now gave him a dose of physic, and ordered him to rest for three days more, when all became right.

I send you this case in consequence of seeing such a dearth of English communications in your late numbers. I think it is really strange—not to use a stronger word. One would imagine that your table would be loaded with communications, from the number of veterinary surgeons now scattered over every part of the country.

THE POISONOUS EFFECTS OF THE FLESH OF DISEASED CATTLE, AND THE GASES PROCEEDING FROM THEIR CARCASES.

Although we think the danger over-rated, yet the following extract from a Report by M. Frank, provincial counsellor of Magdeburgh, and published under the authority of the Prussian government, may convey a salutary caution to those who have much to do with cattle.

A labourer in a neighbouring village died in consequence of the sting of a fly, which he received on the back of his left hand a few days before. The arm of another has mortified so far as the elbow joint, from a similar cause. The physicians of Magdeburgh thought it probable that the flies which stung these individuals took the poison which they communicated from cattle that had died of malignant fever, and whose carcases had been left unburied.

Several proprietors of cattle were afflicted with dangerous fevers, from having touched the mouths or gangrenous ulcers of cattle labouring under inflammatory fever. Some men died who had bled heifers attacked with this disease. A woman who drank milk from a cow thus diseased, died: and several dogs and pigs died within twenty-four hours after having eaten of the flesh.

We may add to the above, that M. Fœderé (*sur les Epidémies*, p. 117) states, that a febrile dysentery prevailed among the troops at Entrevaux, produced by the flesh of cattle that had been overdriven, and were afflicted with red-water: that at a village near Nice, a man died, and all his family became dreadfully ill, after eating the flesh of a cow that died of the epidemic then prevailing: and that so many accidents of the same nature occurred during another epidemic, that the sale of the flesh of cattle that had died of it was forbidden, under a heavy penalty.

About four years ago I was examining a cow that died of inflammatory fever. I was immediately afterwards seized with violent vomiting, and felt considerable lassitude for several days. The butcher who opened her became dangerously ill.

In the year 1823, I was required to ascertain the cause of the death of four cows that had dropped suddenly. A saturated solution of corrosive sublimate had been applied as a cure for mange. The butcher who opened them for me took to his bed the same evening, and had severe inflammatory fever.

A singular case connected with the above, and shewing the rapidity with which the animal fluids may be converted into the direst poisons, is extracted from the *Journal der Practischen Heilkunde.* A person at Munster quarrelled with a soldier who lodged in his house. The latter drew his sabre and attacked his host, whose wife, terrified at the danger of her husband, rushed upon his adversary and wrested the weapon from him. She then, in the highest state of agitation, took her infant from the cradle and applied it to her breast. The child had scarcely began to suck ere it sighed, and expired. The milk of the mother had been converted into a deadly poison.

Y.

EXPERIMENTS ON THE USE OF CREOSTOTE IN THE DISEASES OF DOMESTICATED ANIMALS.

By Herr Maassen, *V. S. Wurtemburg.*

The first experiment was on a setter with canker in the ear. The owner of the dog had ordered it to be hanged, as all remedies had failed in producing a cure. Herr Maassen prescribed creostote ʒss, et spirit. vini rectificat. ʒij. This mixture was applied once in every day to the diseased part. In a few weeks the dog was completely cured; and has since had no return of the complaint. In a terrier, and also in three other spaniels, the effect of this application was equally satisfactory. In some cases, where the disease shewed itself in a less degree, the creostote was dissolved in water instead of spirits of wine. It is always necessary to take away the collar while the dog is under treatment, in order that the flap of the ear may not be injured by striking against it.

He tried the same medicine with equally favourable results on horses. He had a four-year-old thorough-bred horse brought to him, which was suffering from a cancerous sore in the frog of the right fore foot. The disease had several times appeared to be cured by different remedies; but as soon as the horse was used, it returned again as badly as ever. He first placed the foot in a poultice, in order to soften the horn. He then removed all the diseased parts with a knife, and by that means allowed the pent-up matter to escape. Then, having subdued the inflammation by cold applications, he ordered creostote ʒss, and spirit. vini rectificat. ʒij, to be applied to the surface of the frog once a day. The foot was then bound up with dry bandages; and this treatment was continued during several days.

In the course of ten days the frog was so far healed, that the lotion was only required to be used in a diluted state. The treatment of this case commenced on the 14th of April. In the middle of May, the horse was shod, and fit for service; and, notwithstanding that he was worked hard, no trace of the disease was afterwards to be seen.

A cart-horse, that had suffered some time from an old painful sore on the lateral cartilage of the right fore foot, was brought to him. The sore was swelled at the edges, and exhaled a very fœtid odour. Several modes of treatment had been resorted to, and some of them had certainly done good; but still unhealthy pus continued to be secreted, and the wound was altogether indisposed to heal. He immediately ordered the creostote to be

used. The wound was very soon completely healed, and the animal has never experienced any relapse.

He intends to try the effect of this drug, which has already been found to be so valuable in human medicine, as a remedy for the foot-rot in sheep; and from what he has already seen of it, he confidently anticipates the most favourable results.

Hippologische Blätter.

CASE OF RUPTURE OF THE LEFT CORONARY ARTERY IN A HORSE.

By Herr Borgman, *of Hirschberg.*

On the 18th of June 1833, a levy of horses was made in Hirschberg, for the remount of the second squadron of the seventh provincial cavalry regiment. In order that these horses might be carefully examined as to their soundness and fitness for service, they were ridden rapidly in the streets. One of them slipped up, and came suddenly and violently on his side. He, however, immediately got up, to all appearance uninjured, and afterwards ate his food with avidity.

When the examination had taken place, the commander of the troop left all the horses together, to be fed and shod; and, this being done, each under officer was quartered on some neighbouring village, and ordered to set out with his men. One of these, who had left his own horse in the suburbs in order to be shod, mounted the one that had fallen down in the morning. The animal appeared quite calm and tractable; but just as the officer gave the word of command to march, it, without any apparent cause, leaped so high that it nearly sprang into the shop-window of a neighbouring house, and then fell back on the ground and died immediately.

He was not opened until the next day. After the most careful examination of the stomach and intestines, I could find nothing abnormal; but on opening the chest, the pericardium appeared to be very much distended, and of a blue colour. On cutting into it, I found between it and the heart a mass of coagulated blood, weighing nearly 4℔.

It is my opinion that, in consequence of this mass of blood, the heart could no longer beat, and the circulation of blood being necessarily stopped, this caused the death of the animal. The cause of this coagulated blood I found to be a rupture of the left coronary artery; and the cause of this rupture was doubtless the fall he had in the morning. It appears to me most pro-

bable that, after the rupture, the blood continued to ooze slowly out of the coronary artery into the pericardic bag, and when this was as full as it could be of blood, the horse died.

Magazin für die gesammte Thierheilkunde.

ON PUS.

THE MEANS OF RECOGNIZING THE PRESENCE OF PUS IN THE DIFFERENT FLUIDS WITH WHICH IT MAY BE MIXED, AND PARTICULARLY IN THE BLOOD.

By M. Al. Donne.

In a memoir published by this gentleman in the *Archives générales de Médecine,* he has endeavoured to explain the manner in which pus may be detected in the following fluids: the serum of the blood—the serosity—the mucus of the saliva—an aqueous solution of albumen—bile—urine—semen—pure milk—milk having undergone certain changes—colostrine and blood. He found the characters presented by the pus to be two in number. 1st, its being transformed by ammonia into a transparent and tenacious jelly. This effect is equally appreciable in a small portion of pus diffused in water. 2d. The same re-agent does not change any of the properties of the blood. By the former of these properties, the pus in the first nine of these substances is distinguished; and by the second, the difference of the blood. These characters, however, although generally to be relied on, are not always infallible.

He has also compared the difference between the globules of pus and those of blood, and he has obtained the following results:—

The globules of pus are,	The globules of blood are,
1*st.* Spherical.	1*st.* Globular.
2*d.* Of $\frac{1}{1100}$th part of a millimetre in diameter.	2*d.* Their greatest diameter does not exceed $\frac{1}{1120}$th part of a millimetre.
3*d.* Wrinkled or furrowed.	3*d.* Smooth.
4*th.* Terminated by a fringed border.	4*th.* Terminated by a plain border.
5*th.* Traversed by lines, which cross each other, and give an appearance of mesh-work.	5th. Presenting no reticulated appearance.
6*th.* Without any appreciable nucleus.	6*th.* Having a central nucleus.
7*th.* Not changed by ammonia.	7*th.* Entirely insoluble in ammonia.

These characters are not invariable.

Pus mixed with a certain quantity of healthy blood communicates to it all its physical properties; and the new pus, thus formed, can produce the same phenomena when mingled with more blood.

Jour. de Méd. Vét.

A CASE OF SYMPTOMATIC VERTIGO (STOMACH STAGGERS) IN A POST HORSE.

By M. Olivier, *M.V., à St. Maximin.*

On the 17th of October, 1837, M. Jussieu, a post-master, left a horse, six years old, at my infirmary, that had refused his food during two days, and had lost all his usual spirit.

It was about five o'clock in the evening when I saw him. He staggered as he walked—fell upon the man who held him—and pushed obstinately forward if any one attempted to stop him. My prognosis was unfavourable. I inserted two setons on the sides of his head, and applied stimulating sinapisms over the setons. An ounce of tartarized antimony was administered in an infusion of chamomile: laxative injections were also thrown up, to one of which I added an ounce of aloes, and a similar quantity of sulphate of soda. We were compelled to cast him, in order to accomplish this.

We kept him in this position until one o'clock in the morning, when his agitation becoming extreme, and the sweat running from him in torrents, we released him, and, placing him in a large stable, took every care that he should injure himself as little as possible. During the moments of calm he bore heavily on the halters to which he was attached, pushing forward—holding his head low, and which he inclined constantly to the left side. He was sadly outrageous during the greater part of the night. The injections which had been thrown up were not returned. The urine was of a red colour, and very forcibly expelled.

From four o'clock in the morning until mid-day, he maintained one fixed position, constantly pushing forward. He was unconscious of every thing around him, and was completely blind and deaf.

To this lethargic state succeeded new and still more violent struggles. We continued the mucilaginous injections, with the addition, twice in the course of the day, of an ounce of emetic tartar, with the same quantity of sulphate of soda and nitrate of potash. The sinapisms were re-applied on the side of the head.

The following night was comparatively calm. The comatose state remained the same, but the access of fury was much more rare. Four setons were now applied, with the administration of mucilaginous injections.

On the morning of the 20th, hanging back on the reins, and in such a state of immobility that it was only by severe blows with a whip that we could induce him to quit this position, diametrically opposite to that which he maintained so obstinately on the preceding days.

An evacuation of semi-fluid fæcal matter now took place, which I regarded as a good augury. He also urined in sufficient quantity, and without any violent efforts, which he had not done before. Finally, the development of his pulse—the moisture of the skin—the countenance a little animated, accompanied by some degree of hearing, and a confused perception of objects, and the cessation of the tendency to bore forward were pleasing, and from which I was tempted to draw a favourable prognosis. I presented him with some whitened water, and he drank nearly half a pailful. In the course of the day he drank several times of the same liquid with avidity, even plunging his muzzle into it.

21*st.*—He continued to improve—his bowels were opened—he searched for something to eat, and perfectly distinguished surrounding objects.

30*th.*—He was dismissed.

From this isolated fact, to which, however, I could add many others, I do not pretend to draw the conclusion that emetic tartar will always effect a cure in symptomatic vertigo; but it tends to support the opinion of the learned professor *Gilbert*, and the valuable observations of MM. Philippe and Crepin. These distinguished veterinarians have proved, in a memoir full of interest, and containing a great number of well-detailed cases*, they have proved, I say, the immense advantage that may be derived from the employment of large doses of tartarized antimony in sympathetic vertigo. They have well-demonstrated the danger of having recourse to blood-letting in the treatment of this fearful disease, the primary cause of which is bad food, or a bad mode of feeding too long continued, and which must necessarily lead to irritation of the primæ viæ, and, sooner or later, dangerous vertiginous affection. For my part, I am well-assured that, in a practice of twenty years, I have seen more than sufficient of the inefficacy of bleeding in cases of staggers, and par-

* See the Journal of Veterinary Medicine, theoretical and practical, for February 1835; and the Veterinarian for 1835, p. 257 and 258.

ticularly in post-horses, who often have not time fairly to digest their food, on account of the rapid and unexpected work which they are often called on to perform.

Journal Vét. du Midi, Avril 1838.

[It is difficult to understand the *modus operandi* of the tartarized antimony in stomach staggers, and the forbidding of venesection sounds strangely to the ear of the English veterinary surgeon; but the cases of MM. Phillipe and Crepin, related in the eighth volume of THE VETERINARIAN, deserve serious attention, although we must freely confess that we do not rank among the converts to their opinion.—Y.]

LETTERS TO A STUDENT.

No. IV.

By Professor STEWART, *Glasgow.*

BEWARE OF DRENCHES.

AN article in the last VETERINARIAN reminds me that I owe you a letter upon a subject of considerable importance.

When you are under the necessity of drenching a horse, you are not to put a twitch on him, nor to pull out the tongue, nor to raise the head any higher than is absolutely necessary. You are to keep the neck straight; and the mouth-strap is to be placed close behind the tusks, and not pressing the cheeks into the mouth. Make the assistant who supports the head stand fairly below it, and with the staff perpendicular to the ground. If the draught is pungent, or very disagreeable, give it in small quantities; and if it is so much as a quart, let the head down for a few seconds after you have given one half of it. A strong, wide-mouthed, smooth-necked bottle is better than a horn. Keep it away from the teeth. You are not a good operator if you let it be crushed between them.

Notwithstanding every precaution, and the greatest care, accidents will sometimes happen in drenching horses. By raising the muzzle you depress the larynx and open the glottis. In some short, thick-necked horses much elevation of the muzzle seems to render them *unable* to close the glottis.

The safest way of giving a draught is to administer it when the horse is lying, as he mostly always is in the cases which imperiously demand a draught. Place your hand in the mouth, and take a very firm hold of the cheek at the labial angle; raise the

muzzle, and keep the poll on the ground; let another man hold by an ear and the collar to keep down the head; then pour in the fluid by degrees. The head and the neck should form such an angle as they have when the horse stands at ease. If the angle is very acute, the horse cannot swallow; if very obtuse, he is apt to choke.

When the horse is standing you may sometimes get a draught into him without using a staff to support the head. When you can support the head by placing your hand under the lower jaw, the horse will generally bring it down by force before he will let the draught run down the trachea. The staff he cannot overcome so easily, and often a draught cannot be given without it.

Now, you are never to give a draught to any horse unless you think he will die without it. There is one disease to which slow working horses, and all others who live on bulky food, are very liable. This disease often destroys life; and, so far as my experience has gone, it can very seldom be cured by any medicine given in a solid form. Fluids must, therefore, be administered, though it is at considerable risk. But draughts are often recommended, and often given, when balls would do nearly as well. It is not generally known that there is any danger in drenches; and I have never met with any objection to their use solely on account of their danger. I am, however, well persuaded that the following brief record of cases will enable many practitioners to recollect others of the same kind.

Case I.—In November, 1836, a draught-horse got three doses of a mixture, containing turpentine, ammonia, and water; he coughed after the last one, and was then bled to eight quarts. Subsequently he shewed symptoms of bronchitis, and for which he was treated. He recovered, but has been broken-winded ever since.

Case II.—A draught-mare got spirit. tereb. and oil. She coughed once. Next day she had bronchitis, but received little attention. She died on the ninth or tenth day.

Case III.—A draught-horse got ammonia, linseed oil, and spirit. tereb., and died without treatment on the fourth day. The breathing was very quick from beginning to end.

Case IV.—Another horse got the same draught, coughed violently; received no treatment but one bleeding, and died on the sixteenth day.

Case V.—A horse got a draught, containing sulphur, ginger, and water. Next day he had bronchitis, and was put under treatment. He did not lie down until the nineteenth day, but his recovery was perfect.

Case VI.—A very handsome draught-horse had been fre-

quently ill, and so often drenched, that at last no fluid medicine could be given, either standing or lying. The twitch was applied, though the surgeon had previously experienced its danger. The horse, however, got every drop of the medicine, and was instantly relieved from pain. He did not cough, but his breathing shewed at once that he was in danger. At night, the respiration was 50, the pulse 75, small and hard. On auscultation at the trachea, there was distinct gurgling. The horse was immediately put under treatment, which I think was not sufficiently active, though it seemed to produce amendment until the fifth day. On the fourteenth day he died, never having lain after he had the draught.

Except a small portion on the upper part of the left side, the pleura was intensely inflamed, and coated with lymph nearly an inch thick. The chest was full of water, in which were large masses of loose lymph. The lungs were completely disorganized; the bronchial tubes in some places filled with solid lymph, in others with pus, in others with bloody froth. There were large collections of matter in the lungs, some fluid, and some semi-solid.

Case VII.—A horse had the same medicine; but neither coughed nor breathed as if any had entered the trachea. Next day it was sufficiently plain, and he was promptly treated. He lay down on the tenth night, and went to easy work on the seventeenth day. Since that time the horse has been four times ill; but only once so severely as to require the same medicine, which did no harm upon that occasion.

Case VIII.—A carriage horse got ginger, sp. terebin., ammonia, oil, and water. He took the medicine without the least resistance, but his throat was on the stretch when head was up, and when it was let down some of the medicine ran from the nostrils. He coughed none. In a few minutes his breathing was at 110; he was immediately put under treatment, and recovered. He did not lie down until the twelfth night.

Case IX.—A horse got ammonia, spirit. tereb., and sulph. zinci, in water: he coughed and became ill, but was neglected, and died on the eleventh day. The chest presented the same effusion of fluid, inflammation of the pleura, and disorganization of the lungs, as found in case VI.

Case X.—A foal got warm ale, pepper and gruel, and died the same day.

Case XI.—A draught-horse got spirits of turpentine alone, and died instantly.

Case XII.—A brown mare got a bottle of linseed oil, and died in about a fortnight. There was much water in the chest, and

disorganization of the lungs; but the pleura was only roughened with lymph.

In my next letter I may say a few words more on this subject, particularly on the treatment of what may be termed accidental bronchitis.

MR. MAYER IN REPLY TO MR. CHARLES CLARK.

Sir,—I have had the honour of laying before a meeting of veterinary surgeons your communication*, inserted in the last month's VETERINARIAN, and am authorised by them to address to you the following communication, which they have agreed upon.

I remain, yours, &c.

THOMAS WALTON MAYER, V.S.
Chairman.

IT is with considerable reluctance we find ourselves called upon to make observations and statements which, we trusted, the method we had taken of making known our sentiments to you would have totally prevented; and were it not that you have thought proper to make several statements which will, if allowed to remain uncontradicted, materially alter the tone and character of your intended reply, we should have considered it unbecoming in us to offer any farther observations.

We learn, with considerable surprise, from the first part of your communication, that "you find yourself called upon to prove an allegation made in *The Lancet* some ten years ago." It surprises us, because we read the statement which we called upon you to prove in THE VETERINARIAN in the *month of May last*. With any statements made by you in journals not directly connected with veterinary science, we beg to inform you we have nothing to do; nor were we aware that you had ever previously made such a statement, until acquainted by yourself; consequently, we could not call upon you to maintain it.

The statement in your reply to Mr. Morgan, and which was inserted in the May number of THE VETERINARIAN (and which we requested you to prove), is, we presumed, what you believed to be true, and *intended to appear as the truth* up to the time of its insertion, to which insertion we beg to remind you the following note was attached*:—"If this singular assertion is doubted, I am ready to undertake the proof of it in a concise and straightforward manner.—C. C." This was the challenge—a challenge not made by us—made by you, and proclaimed before the whole

* See VETERINARIAN, May, p. 247.

profession. We took up the gauntlet which you threw down—we quietly, and, we trust, gentlemanly, expressed our doubts upon the subject, by calling upon you, not to prove assertions made "some ten years ago," but as our resolution, "ambiguous," as you are kind enough to call it, expresses, to prove, by a reference to well-authenticated facts, the statement made by you and inserted in THE VETERINARIAN in *May last.*

Such being the plain facts of the case, we were surprised, knowing with what *nice gentlemanly feelings your breast is actuated,* and how *careful on all occasions you are* lest an inadvertent word should tax others with doing what, perhaps, they had not done, and what they did not intend to do, to find ourselves charged with having "the simplicity to require" you "to defend assertions made ten years ago by a reference to present opinions, changed from what they then were." Sir, we have perused (as requested by yourself) the resolutions again, and we certainly do not find any such assertion, nor can it be implied; nor do we find that we "distinctly accused the Professor of having veered round and changed the doctrines which he pertinaciously promulgated thirty years before." God forbid that we should accuse any man of changing his opinions: on the contrary, believing as we do, that every man is a *student* in his walk through life, constantly striving after, yet never arriving at perfection, we should consider that his investigations had led to little profit, did they not either tend to the establishment of new principles, or to the overthrow of old ones, if borne out by facts and experience: and sooner than censure a man for adopting that which he believes to be the truth, to the overthrow of his former opinions, we think that he is entitled to the *highest praise.*

But, Sir, you further state that, by allowing that Professor Coleman's opinions have undergone considerable alteration and modification, we have "nonsuited ourselves." What! have we proved that the word College no longer commands respect? Have we proved the failure of all Mr. Coleman's patents, and that the peculiar theories which he enforces with most weight and vehemence are almost uniformly true when exactly reversed?

We are obliged to you for your *kind* and *considerate* remarks on our objects, and on the friendly feelings by which we are actuated towards Professor Coleman. It is not our intention to inform you whence we derive our information on veterinary matters; suffice it to say, we do not obtain it from *The Lancet:* and we will stake our character and reputation for the truth of the statement which our resolution contained.

You say, that it is the body of the profession which has changed; you truly say this in one sense of the word. It has

changed: for it will no longer allow any man to direct his attacks on its members (especially one who cannot correctly be called one of the profession) without taking up the pen in their behalf; nor will it permit yourself to ride rough-shod over that profession, at the expense of individual members of the same, even allowing that *your shoes have the advantage of being put on without nails.*

Finally, we will not debate with you the terms upon which you accept our challenge, as you term it; but we at once declare to you that, if you undertake the proof of the assertion as made in 1838, "in a concise straightforward manner;"—if you wish to act in perfect truth and justice,—you must prove it from facts of the same date as the assertion just mentioned, and not from books, pamphlets, and letters, some twenty or thirty years old.

August 11th, 1838.

THE VETERINARIAN, SEPTEMBER 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE LAWS RELATING TO WARRANTY IN THE GERMANIC STATES.

By M. J. IMLIN, *of Strasbourg.*

AUSTRIA.

IF an animal becomes ill or dies within twenty-four hours after its delivery to the purchaser, it is presumed that the disease existed at the time of sale.

The same thing is presumed when, within eight days after the sale, MANGE appears in the *hog*, and FOOT-ROT or SCAB in the *sheep*, or, in the last animal, THE ROT occurs within the space of two months: also if CONSUMPTION occurs within thirty days after the sale in *cattle*, or, in *horses*, and especially of much value, STRANGLES, or GLANDERS, or BROKEN-WIND should appear within fifteen days, or FARCY, or RESTIVENESS, or AMAUROSIS, or SPECIFIC OPHTHALMIA within thirty days.

The laws impose on the purchaser the obligation of giving notice to the seller, or, in his absence, to the legal authority of the place, of the existence of the unsoundness the moment he discovers it, and always in sufficient time for the tribunal to proceed to the examination of the living or dead animal, through

the medium of experienced persons, before the expiration of the legal period of warranty. They likewise authorise the purchaser to institute his action after the prescribed time, if he can produce actual proof that the unsoundness existed before the sale; and, on the other hand, the seller is permitted to adduce proof that the first appearance of the unsoundness was subsequent to the sale.

The law makes no distinction between the animal being sold, or given in exchange, or coming in right of inheritance. It likewise permits the action to include a pair of horses, or other animals, when one only of them becomes unsound, and the price was not fixed for each animal separately.

It does not matter whether the seller was cognizant of the unsoundness. If he is condemned to retake the animal, he must pay all the expenses of his keep, and of the legal proceedings.

The buyer loses all right of bringing his action for unsoundness when he fails of plainly and expressly pointing out the nature of the evil of which he complains. The owner of the horse may at the time of sale point out any faults against which he will not give a warranty, but the vague expression, that he does not warrant the horse at all, will not relieve him from future liability.

The simple disposition or apparent liability to a certain disease is not sufficient; the purchaser must prove the actual existence and manifest development of the disease. On the declaration of the veterinary surgeons appointed by the tribunal to examine into the case that there is some doubt as to the disposition to, or development of, a certain disease, the judges have the power of prolonging the usual duration of the warranty. The duration of the warranty commences from the delivery of the animal.

With regard to other faults or vices beside those expressly named in the laws relating to the warranty of any animals, and which may become apparent within twenty-four hours of the sale, the purchaser may institute an action for any sum not exceeding half the price, or he may bring an action generally for fraud; but he must in these cases furnish proof that these faults existed before the sale.

Bavaria.

In the different states which now compose the kingdom of Bavaria the old laws of warranty are in full force.

A. In the common law of Old Bavaria there are laws relating to GLANDERS, MANGE, and PHTHISIS* in the *horse*, and ex-

* The French term is VIEILLE COURBATURE, a vague and unscientific term. The words consumption, or pulmonary phthisis, will best convey its true meaning.

tending to fifteen days after the sale—to CONSUMPTION in *cattle*, to the SCAB in *sheep*, and to CUTANEOUS ERUPTIONS in *pigs*, extending to four weeks. In case of fraud on the part of the vender, the period of the commencement of the action is not limited. Sales effected by order of government, or in consequence of the legal seizure of certain animals, are exempt from the laws of warranty.

B. In the old principality of Wurtzbourg an old law of 1742 is still in full vigour, considering as unsoundness in *the horse* GLANDERS, MANGE, CHRONIC AFFECTION OF THE LUNGS, BROKEN-WIND, MAD STAGGERS, and IMMOBILITY. With regard to these diseases the warranty extends to thirty days, before the expiration of which the purchaser must commence his action, either by complaining to the authorities of the place, or by laying before the authorities, whether in his own district or that in which the vender may reside, a certificate from qualified veterinary surgeons, stating the existence and nature of the unsoundness. A warranty of three months with regard to CONSUMPTION extends to *cattle;* and all the expenses of legal proceedings will fall upon the seller, and the money paid must be restored to him, whether the beast may die in the meantime or be destroyed by the butcher. If this malady should be recognized after the three months have expired, but before the end of the sixth month, the loss in the value of the beast shall be equally divided between the purchaser and the seller, but the latter shall not be subject to any other expense. In either case the vender may commence legal proceedings against those from whom he may have purchased the cattle, if within the period of six months. The warranty against the ROT in *sheep* extends to three months. If the ROT is not discovered until the slaughter of the animal, the seller is not liable to any fine or return of money if the meat is uninjured; but if that is rendered unsaleable, or is deteriorated in value, he must compensate the buyer for the loss sustained. A warranty of four weeks is allowed for TURNSICK, EPILEPSY, CALCULI in the urine or bladder, INVERSION OF THE WOMB, DROPSY, POLYPUS IN THE PHARYNX, or OBSTINATE REFUSAL OF FOOD. For THE MEASLES in *pigs* there can afterwards be no action of warranty when the buyer has not examined the animals at the time of sale. When at the time of sale the buyer recognizes the existence of *the cysticercus**, he should return the animals immediately to the vender, for if he retains them it will be at his

* The *cysticercus* is the supposed hydatid in the cellular membrane of the hog, and connected with or the cause of that peculiar cutaneous or subcutaneous affection recognized in this country by the name of *measles*, from its supposed resemblance to the eruption of measles.

own loss. The vender, however, may be called upon for remuneration, if, on killing the pig within six weeks from the time of purchase, these worms should be found in any other part beside the tongue, although they had been visible in that organ at the time of sale. The foreign cattle merchants are treated according to the laws of their own country whenever the matter can be brought to a speedier termination, or an animal evidently affected with some prohibited disease is not attempted to be forced on the purchaser.

C. The common law of the ci-devant principality of Bamberg admits a warranty of seven days only against the sale of *horses* with CHRONIC AFFECTION OF THE LUNGS, GLANDERS, MANGE, and IMMOBILITY. With regard to the ROT in *sheep* the warranty is only conventional.

D. In the district of Lauffen, formerly a part of the archbishopric of Salsbourg, an ordinance of so old a date as 1716 remains in force; the prohibited diseases, with a warranty of fifteen days, are GLANDERS, IMMOBILITY or VERTIGO, PULMONARY PHTHISIS, and BROKEN WIND.

E. At Aschaffenbourg, and the neighbouring country, formerly dependent on the Electorate of Mayence, there exists a law which says that a warranty of four weeks and a day is granted for *cattle* and *sheep* with regard to the ROT, EPILEPSY, TURNSICK, PULMONARY CATARRH, and the RED-WATER in *cows;* and a year and a day with regard to PULMONARY PHTHISIS. As to *horses*, there is a warranty of four weeks and a day against GLANDERS, BROKEN WIND, and IMMOBILITY, or VERTIGO. Conventional guarantees, in order to be available, must be transcribed into the market-book; and when the duration of any warranty is not expressly stated, it is supposed to be for four weeks and a day. This warranty can extend only to serious diseases and defects, on account of the numerous difficulties which would otherwise continually occur. When a beast, with regard to which there is any dispute, dies, the buyer must immediately send to the vender, inviting him to be present at the post-mortem examination of him. If, at the expiration of thirty-six hours, he does not make his appearance, the examination is conducted by persons legally appointed for this purpose; a *procès verbal* is then sent to the vender, together with the skin of the animal.

When an animal, the subject of dispute, is destroyed, it must be effected in the presence of two proper officers, whose certificates shall be produced before the tribunal. The purchaser loses his claim on the vender if, without previous reference to the tribunal, he sends the animal while living to the butcher.

When the tribunal pronounces against the vender, all the ex-

pense of the keep of the animal and of the legal proceedings shall be defrayed by him. When one of a couple of oxen proves to be unsound, the seller can be only compelled to take back the defective one, or to return half of the money paid; and the same rule will hold good when more than a pair of oxen have been sold. When a cow is declared by the vender to be in calf, and the calving does not take place until a month after the time he has indicated, the purchaser has a right to some indemnity; but if it is found, still later, that she was not in calf at all, the seller must return to the buyer half the estimated value of a calf dropped at the time which he had indicated. The purchaser has also a claim to indemnity for the time during which he has not been able to use the beast. This last arrangement, however, will not take place in case of abortion; but it will be required of the seller to prove that abortion.

F. In the principalities of Anspach and Bayreuth, formerly belonging to Prussia, the custom of that country, and which will be presently described, is followed.

G. In that part of Bavaria bordering on the Rhine the code of Napoleon is observed, with some few additions. A cow may be returned as vicious when she milks herself, when she kicks during the milking, or when she labours under dysentery. If a beast is sold without warranty, it may be returned on account of any unsoundness or vice of which it can be proved that the owner had cognizance. It is supposed to pass into the hands of the purchaser without unsoundness or vice.

In the communes formerly a part of the Palatinate, the warranty extends, in the *horse*, to GLANDERS, EPILEPSY, IMMOBILITY, RESTIVENESS, and latent FISTULA of any part. The warranty comprises four weeks and a day. In *cattle* and *sheep* it extends to PHTHISIS, EPILEPSY, THE ROT, TURNSICK, and CARIES OR CANCER OF THE JAW. The duration of the warranty is four weeks and a day, with the exception of PHTHISIS, in which it extends to two months; with the proviso, that if the animal dies within the first three months, the seller shall return the whole of the price, and half of it only if the animal should be lost in the second three months. When an animal is sold as sound, and without any defect, this sweeping warranty continues fifteen days against every vice or ailment.

In the communes formerly attached to the bishopric of Spires the warranty continues two months against GLANDERS in the *horse*, and four weeks and a day against MANGE, IMMOBILITY, BROKEN WIND, and PHTHISIS; and in *cattle* and *sheep* six months against CONSUMPTION, THE ROT, TURNSICK, and CARIES OF THE JAW. If any of these diseases appear within

the first three months, the whole of the loss is sustained by the seller, and half of it during the second three months. In *sheep* the warranty extends to MANGE; and in the *pig* to MEASLES with a continuation of four weeks and a day.

In the city of Spires the warranty against MANGE, IMMOBILITY, and BROKEN WIND in the *horse* lasts four weeks and a day; against CONSUMPTION in *cattle* four months; against CHRONIC PLEURISY and TURNSICK four weeks and a day; and against CHARBON four-and-twenty hours.

At Landau and Bergzabern the period of warranty extends to three months in the *horse* with regard to MANGE, BROKEN WIND, IMMOBILITY, and PHTHISIS. There is also a general warranty against all diseases for fifteen days. In *horned cattle* the warranty extends to a twelvemonth and a day with regard to PHTHISIS, six months for EPILEPSY, and three months against TURNSICK; and also fifteen days with regard to every other disease.

WURTEMBURGH.

The ordinance of the 17th of February, 1767, is still in force. GLANDERS, IMMOBILITY, every description of VERTIGO, MANGE, FISTULA, FARCY, STRANGLES, and almost every kind of malady, as CANCER OF THE EAR, CARIES OF THE JAW, CANCER OF THE PREPUCE OR VAGINA, or MAMMÆ, and also BROKEN WIND, and PHTHISIS, and SPECIFIC OPHTHALMIA, are considered as unsoundness. The warranty extends to eight weeks for OPHTHALMIA, and four weeks and three days for all the other maladies.

In *cattle*, PHTHISIS and TURNSICK constitute unsoundness, with a warranty of two months with respect to the former, and four weeks and three days with regard to the latter. In *sheep* the HUMID and THE DRY MANGE, with a warranty of a fortnight and a day. In *pigs*, CONSUMPTION and THE MEASLES, with a warranty of four weeks and three days. No particular malady is designated with regard to goats; but the law says that if they are unsound, the loss must fall on the vender. There is no warranty with regard to sows that are suckling their young ones. No action on the warranty can be brought except for these diseases; and the time of the warranty having once expired, the purchaser loses all claim for compensation, even although he may be able to prove that the cause of unsoundness did exist before the sale. No declaration that he will not warrant the animal against certain diseases or causes of unsoundness will protect the seller. The warranty extends to every circumstance mentioned in the law. The sale may be annulled when the value of the animal is diminished one-third by the disease complained of.

Baden.

With some variations not devoid of interest, the laws of warranty are the same in Baden as in Wurtemburgh. In case of diseases recognized by these laws, or in consequence of a mutual understanding between the parties, the purchaser has the right of demanding at his pleasure either the annulment of the bargain or the return of a certain portion of the price. When in this case of conventional warranty no precise time is fixed, it is supposed to extend to four weeks and three days. When the contract for sale is not precise and clear, either an abrogation of the bargain or a diminution of price may be determined on, according to the option of the parties.

In case of abrogation of the bargain, the vender must take back the animal if it is still living, and not only restore the money paid, but defray every expense that may have been incurred.

When it can be proved that the seller was aware of the unsoundness at the time of sale, he shall not only restore the money paid, and indemnify the purchaser for any inconvenience or loss which he may have sustained, but he shall also be fined a sum equal to one-tenth of the price of the animal.

When the flesh of an animal destroyed on account of unsoundness can still be used, the sum awarded to the purchaser will be regulated by the diminished value of the meat, and the expenses actually incurred.

The expiration of the warranty is calculated from the day and the hour of the contract; and the time having passed, the buyer is deprived of all remedy, except in cases of fraud or conventional prolongation of the warranty.

Three persons appointed for the purpose, either veterinary surgeons, or, in default of them, farriers or butchers, must prove the existence of the breach of warranty, by visiting and examining the animal in the presence of one of the presiding officers of the court, and of the parties or their representatives. The *procès verbal* must be written immediately, and transmitted to the parties within twenty-four hours after such examination. The description of the state of the animal must be drawn up immediately after the visit, under pain of vitiating the whole proceedings. In the absence of the vender, whether accidental or designed, his representative shall be named by the court.

There is no regular appeal against the sentence of the judge; but in certain circumstances the *procès verbal* may be submitted to the examination of the board of health of that district.

When the examination of a living animal has been conducted according to law, it needs not to be repeated; but the opening of

an animal that has died of disease, or been destroyed by the authorities, may take place under the following conditions:—Other veterinary surgeons are named, whose opinion will not prejudice the conclusions of those by whom the animal has been condemned, except it is manifest, from the lesions found in the course of the dissection, that they had mistaken the disease. It is not indispensable that this examination should take place during the continuance of the warranty; it must be evident from the post-mortem appearances that the disease was actually existing at the time of sale.

[We make no apology for the introduction of this long extract, and which will be continued in a subsequent number. Some of the regulations are of a singular character, and not a little inconsistent with our habits of thinking on this subject; and the confinement of unsoundness to particular diseases, instead of assuming one grand principle applicable to all cases, is a great defect in continental veterinary jurisprudence. But we must permit M. Imlin to complete his sketch ere we, or, what we should far better like, some of our correspondents, take up the subject in good earnest.]

The cause of veterinary science, as connected with the agriculture of our country, progresses—slowly, indeed, but surely. Some who have great weight now, and whose influence by and by will be yet more powerful, have honourably declared their approbation of the improvement which the Agricultural Society is endeavouring to work out. If there are others who hesitate or oppose—a course so inconsistent and so injurious cannot be long, and never triumphantly, pursued. Good sense and good feeling will interpose; and that wish, so natural and so dear to the human heart, to live in the kind remembrance of those with whom we have been associated, will ultimately unite us all in the accomplishment of the noblest improvement our art has yet received.

IMMOBILITY IN THE HORSE.

This disease, which has been so often referred to in the list of *redhibitory unsoundness*, consists of a paralytic or cataleptic affection of the cerebral or spinal nerves, or both. The power of voluntary motion, and of sensation too, is, to a certain degree, impaired, or altogether suspended. Hurtrel D'Arboval, following Chabert, thus describes it: "There are two principal pathognomonic symptoms, which can scarcely be overlooked, and which are always decisive: first, the absolute or nearly absolute im-

possibility of backing, and especially if, in the usual way, the muzzle is bent against the chest in the attempt to back him, and also the impossibility of uncrossing the fore legs, if they are accidentally or designedly placed across each other. The four extremities remain fixed, or they are convulsively agitated, and the horse either falls on his nose or his side, or abandons himself to the most irregular and spasmodic efforts."

It rarely comes on suddenly, or if it does, if the horse is at work, he all at once stops, seems half unconscious, staggers, and throws his feet apart, in order to keep himself from falling.

When its approach is gradual, the animal appears unusually stupid—inattentive to the voice of his driver, and lost to all surrounding objects. Sometimes he suddenly rouses from this state of unconsciousness, but he presently yields to it again. His motions become more irregular—a general stiffness steals over him—occasionally he falls, but at other times he is fixed as a statue. By and by, urged by the whip, or the blood resuming its natural course, he rouses, and slowly and somewhat stupidly resumes his work.

This tendency to somnolency, or to catalepsy, however, gradually increases,—the fits are more frequent and more obstinate, and the disease terminates in paralysis, either partial or general, and the horse wastes away, and dies.

On examination after death, the lateral ventricles are generally found distended, the plexus choroïdes enlarged, and often filled with concretions, and the substance of the brain considerably softened. The spinal canal is usually filled with a serous fluid, the meninges frequently injected, and the substance of the cord softened.

There is a gentleman to whom we have lately been indebted for much valuable information respecting the state of the veterinary art, and the different character assumed by various diseases on the neighbouring continent. A graphic description of Immobilité, Charbon, and some other maladies, would be most welcome from him.

Y.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

A Treatise on the Articulations of the Horse. *By* J. F. Rigot, *Chief of the Anatomical Works at the Royal Veterinary School of Alfort.* Paris, Bechet, Jun. 1827.

[Concluded from page 452.]

In the last number we alluded to the opinions held by M. Rigot, relative to the little excavations so frequently met with between the condyles of the astragalus, and on the middle ridge of the inferior articulatory surface of the tibia. We also declined attempting to decide whether or not they were correct; fearing that we might possibly involve ourselves in a disputation which has lately taken place between two well-known veterinarians, one a public teacher, the other a private practitioner. The subject, however, being one of no little pathological importance, we hope the reader will pardon us for altering our determination, and giving the result of our own observations, which, on this particular point, have not been very limited.

In every case of decided hock lameness, where we have had an opportunity of anatomically examining the articulation, and this has happened some hundreds of times, we have invariably met with some alteration of structure sufficiently great, independent of the excavations in question, satisfactorily to account for the phenomena that presented themselves during the lifetime of the animal.

It is true, that, in a few instances, these excavations, or, as some are pleased to call them, sulci, were in a decidedly diseased state: but, be it remembered, that whenever this was the case, there was invariably present inflammation of the synovial membrane and its appendices. We regard the inflammation of the membrane as the primitive disease, and the *altered* state of the sulci as a consequence. Lameness in the horse, arising from inflammation of the synovial membrane, although some go so far as to deny even its existence, is not of such unfrequent occurrence as the generality of practitioners may imagine. We have met with some cases which, though few, put the matter beyond doubt.

Where an absorption of the diarthrodial articulatory cartilage is the effect of inflammatory action, the lesion has quite a different appearance from the little sulci to which we so often allude. How unlike is their aspect to any change resulting from morbid

action, when we compare them with the inferior surface of a diseased navicular bone. In the one we have an alteration of structure, and sometimes a loss of substance, which is never to be met with, except in cases where it has been preceded by such a considerable degree of inflammation that lameness of the most painful nature is the almost invariable consequence; while in the other, we have simply a removal of matter, evidently for the purpose of forming a reservoir, by the existence of which a large supply of lubricating fluid is continually kept in the vicinity of those parts of the articulatory surfaces most liable to be affected by friction. They are useful in another way,—they allow a free passage of the synovia from the anterior to the posterior parts of the articular cavity: this is of great consequence when there is an accumulation of this fluid.

The synovial cavity formed by the articulation of the tibia with the astragalus, may be divided into two parts; one anterior to the tibia, the other posterior to it. Their capacities are not at all times the same. They are altered by the flexion and extension of the limb. When the cavity in front is rendered smaller by a motion of the joint, the one posterior is at the same moment rendered larger, and by exactly the same movement. Therefore, such a communication between the two parts of the articular cavity as will admit of a ready passage of the fluid contained therein, is, in cases of hydrops articuli, a desideratum of no little importance. Even in the hock-joint not affected with this disease, were it not for the little space between the middle articulatory ridge of the tibia and the grove between the condyles of the astragalus, along with some other communications between the anterior and posterior parts of the articular cavity, the pressure of the fluid contained in one of them, when its capacity is being diminished by either the flexion or extension of the joint, would distend or even rupture the synovial membrane, and thus produce bog-spavin, or thorough-pin, or, perhaps, both.

From the fact of these excavations being more frequently found, and to a greater extent, in the old than in the young animal, it would appear that they are constructed for the purpose of acting as synovial reservoirs, in order to assist in counteracting the bad effects likely to result from long-continued and inordinate exertion.

Let us, but for a moment, reflect on the great degree of pressure, and the intensity of the friction resulting therefrom, which must exist between the tibia and astragalus of the hunter carrying a welter weight across a close and heavy country, or the gigantic dray-horse drawing a load of a couple of tons over the rough stones, and up the steep hills of our capital. As a matter

of course, Nature, ever wise for the protection and well-being of what she has constructed with such consummate skill, will, in such cases, make some extra provisions against the injuries likely to accrue to one of her most perfect pieces of animal mechanism, namely, the tarsal joint.

We have heard many surgeons, both human and veterinary, on examining these sulci, say that, from the situation which they occupy, and from the irregularity of their appearance, such a state of the cartilage must be preceded by inflammation. Indeed, many imagine that every alteration of structure, and, in fact, all abnormal phenomena met with in the different tissues which form the living animal, are necessarily brought about by inflammatory action. This is one of the many absurdities in which the fire-side pathologist is most apt to indulge.

Observation teaches us, that we ought not to regard every increase and diminution of the action of the different vessels, whether nutrient, absorbent, or otherwise, as inflammatory: there are many diseases in which inflammation takes no part; yet some of them are, nevertheless, fatal in their termination.

There is, however, a fact, which goes much further than any thing we have as yet adduced towards proving that the synovial fossæ are not the results of inflammatory action, and that they should not be considered as morbid productions.

It must be admitted, that there are a great number of our domestic animals which are rarely, if ever, affected with lameness, excepting that resulting from accident. The cat is one. Our feathered bipeds may also be included in the list. Now, in the cat we have frequently met with excavations, to a greater or less extent, in the articulatory cartilages; but more particularly in those of the elbow and tarsal joints. While dissecting the articulations of common poultry, and those of many of the wild species of birds, especially the larger of the raptores, we have often seen the same appearance. Some time ago, through the kindness of our friend Mr. Youatt, we had an opportunity of examining some of the articulations of a very large deer. Here we found excavations both extensive and deep in some parts of the diarthrodial cartilages, yet the animal shewed no lameness previous to death.

We wish it to be particularly understood, that we do not assert that there is *never* an ulceration of the cartilages of the tibia and astragalus, unaccompanied by any other lesion, and which is, at the same time, the sole cause of lameness. We only say, that we have never met with it uncombined with disease elsewhere.

The following are the conclusions to which we have been led by our investigations:—

1. That the synovial fossæ, which by some have been mistaken for ulcerations causing lameness, are frequently to be found in the articulations of all our domestic animals; but more particularly in the solipedes.

2. That they are developed as the animal advances in life, and as his labour is great.

3. That their appearance is quite different from that presented by cartilage when suffering under the effects of inflammation; for instance, the inferior surface of the diseased navicular and those of the cuneiform bones of the hock affected with osseous spavin.

4. That, when found in a diseased condition, it is always in conjunction with an altered state of the synovial membrane.

From these facts we are induced to believe, in common with professors Dick and Rigot, that, so far from these fossæ being the result of disease, and one of the causes of hock lameness, they are neither more nor less than reservoirs for supplying with a lubricating fluid those parts of the articulation which, by their mechanical relations to each other, are most liable to be affected by friction.

Frequent examinations of diseased articulations in the horse settled the dispute so long on the tapis between human pathologists, as to whether or not the diarthrodial cartilages are possessed of a sufficiently high degree of organization to be acted upon by their own vessels.

How often is ulceration seen to commence on the free surface of cartilage, when there is not even the slightest trace of any process or elongation of the synovial membrane having communication with the ulcerating surface, as described by Mr. Key, in the "Medico Chirurgical Transactions." This gentleman seems to think, that absorption of the cartilage cannot, with propriety, be attributed to any change originating in the cartilage itself; but to the vessels of the synovial membrane. It is a curious theory, of one part of the body being absorbed by the mere contact of another, especially when there is no continuity of substance between them. We must confess that we are doubtful as to its possibility, there being no means of proving the veracity of such a statement. This, however, is not going so far as Cruveiller, who says, that the diarthrodial cartilages are totally devoid of vitality. We have only to examine the changes they undergo in herbivorous animals, to be thoroughly convinced of the fallacy of such an assertion. We have succeeded more than once in tracing vessels running from the articular edge, under the cartilage, to its centre, where they passed through its thickness, and were eventually lost on the surface of a very superficial ulceration.

These cartilages are, however, frequently the seat of little miliary concretions, and many other alterations of structure, which fully prove that, although it is impossible to demonstrate their vessels, they are possessed of a considerable degree of vitality.

The cartilage of the glenoid cavity of the scapula sometimes presents an appearance totally different from any to which I have just alluded. By the loss of the uniting cellular membrane, the fibres of the cartilage lose their lateral connexions with each other and are attached only at their base to the bone, the other extremity being free, and in some instances projecting some length above the surface of the surrounding cartilage. This degeneration is never the cause of lameness; at least we have never either known or heard of its being so. We mention it, because we have not met with an account of it in any veterinary work. The changes to which cartilage is subject are so very numerous, that, to do any degree of justice to the subject, we should be obliged to occupy several pages: and in the end the production would be more curious than useful. We fear we have sadly transgressed in so far outstepping the limits of a review as to give a detail of our own opinion. But we thought that the subject was one that had been too much neglected by the generality of English practitioners: this, and this alone, must plead our excuse.

M. Rigot is at present engaged in finishing another work. We have seen some parts of it. It treats on the comparative anatomy and physiology of the articulations of almost all our domestic quadrupeds, with a minuteness of detail hitherto unequalled by any veterinary, and certainly never surpassed by any other anatomical author. It is illustrated by many accurate and highly-finished drawings, the productions of the author's own pencil, shewing the different parts of each articulation.

As a veterinary anatomist, we know of none more able than professor Rigot. He is a man of great talent, and, when he has any object in view, one of unremitting industry. These, combined with a good education, have raised him to the distinguished rank which he now holds in his profession. We expect much from him, and must not be disappointed.

H. F.

RABIES.

[In a letter with which I have been lately favoured by Dr. Forster, of Bruxelles, are the following observations, to which I certainly cannot give my assent, but which deserve to be recorded. I acknowledge that fits, and particularly the fits of distemper, are occasionally mistaken for rabies, and I have seen some cases of enteritis which a person not thoroughly drilled into a knowledge of the nature and symptoms of rabies might mistake for it; but, generally speaking, the characters of the disease can scarcely be mistaken; and there can be no doubt with regard to its too frequent occurrence. Who the English veterinarian to whom he alludes is, I know not.—Y.]

"I CANNOT quit the subject of dogs without adding a note on canine madness, drawn from the *Observations on Hydrophobia, by an English Veterinarian.* 'The custom of muzzling dogs during the dog-days has long been discontinued in England, where, after the most careful examination, it has been found that true rabies in the dog is a malady exceedingly rare; and that the greater number of cases reported as hydrophobous, are those of dogs attacked by a malady of a very different nature, and which are perfectly harmless. The reasons for abolishing the use of the muzzle in dogs are,

'1st, That it prevents them from drinking, and therefore may produce fever.

'2d, The very precaution may generate fear in the public mind, and consequently be favourable to the production of the disease, for fear is a powerful predisposing cause. For this reason the newspapers in certain countries are not permitted to report cases of rabies.

'3d, In Turkey, Italy, Portugal, and other hot countries, where the dogs run the streets in troops, hydrophobia is not heard of even in the summer; whence it must be concluded, that the apprehension of this malady in the north of Europe is much exaggerated by the fear and timidity natural to the human mind. If all the dogs suspected to be hydrophobous were chained up instead of being killed, we should probably find that there were very few that were really mad.'"

As a confirmation of this opinion, Dr. Forster quotes an observation made by the late Mr. Abernethy. It is characterized by his peculiarity of style and peremptoriness of decision—it is a perfect gem in this respect; but it is altogether erroneous.

"Some persons have asserted that there is no such thing as canine madness. This is not true. Good cases exist, but they are rare indeed. A hundred other disorders are mistaken for it. A dog worried, or in pain, or out of health, or merely wanting

water, runs wildly, or merely runs wildly in search of a lost master. A pack of fools imagine that he is mad, and run after him, just as they do after what are called mad bulls. Public alarm does the rest, and the incautious editors of newspapers, who, by the by, ought never to report such cases; for I know it for a fact, that the mind may be so affected by fear, and the parts about the throat so disordered in consequence by sympathy, that an imaginary disorder, sufficient to kill the patient, may be brought on. A dog that has bitten a person should be tied up, and carefully fed and watered and observed, that it may be known, as in most cases it will be, that he is not mad, and the patient's mind set at rest. Witchcraft was formerly believed in, and, when that was the case, persons actually swore to enchantments in courts of law. The witches were burned, and the bewitched died of imaginary disorders."

PIG-SPAYING EXTRAORDINARY.

Sir,—If you think the following account of the performance of an operation in a very important branch of veterinary practice, viz. spaying, worthy of insertion in your valuable periodical, it is at your service, and I will vouch for the authenticity of it.

I remain, Sir, your obedient servant,

JOSEPH GAMGEE, V.S.

MR. John Bowman, of Howden, a practitioner there, and a member of the Veterinary College, undertook, for a wager, to spay one hundred sow pigs in two hundred minutes. The number being procured, and umpires chosen from amongst the neighbouring practitioners, Mr. B. commenced at ten o'clock in the morning, at the Wellington Inn. The first eleven were disposed of in twelve minutes; the next forty-five in fifty-nine minutes and thirty seconds, and the remaining forty-four in seventy-nine minutes and fifty seconds; thus completing the task in two hours, thirty-one minutes, and twenty seconds,—being forty minutes and forty seconds within the given time, and averaging only one and a half minute for operating on each.

The ninety-third occupied only fifty-six seconds. The task would have been accomplished sooner, but it took Mr. B. six minutes to operate on the forty-fifth pig, from a malformation of the ovaria, and the consequent difficulty in extracting it.

[We esteem this adroitness, even in so humble a branch of our art as the spaying of pigs, highly honourable to Mr. Bowman; and we thank our friend from Florence for the opportunity of inserting an account of this unique performance in our Journal.—Y.]

RESULTS OF EXPERIMENTS ON THE SPAYING OF COWS.

By M. Levrat, *Veterinary Surgeon, Lausanne, Switzerland.*

[In The Veterinarian of 1835, two very valuable papers on this subject, communicated by this gentleman, were introduced. We fear that they did not make a due impression. To enable a cow, for an indefinite period, and, probably, until old age, to yield her greatest quantity of milk, must be of immense advantage to the dairyman. A more important discovery could scarcely be made than the perpetuation of the milking powers of the cow. After three additional years' experience, M. Levrat resumes the subject. He commences by giving a fair and honourable account of the introduction of this operation. The castration of the cow, like that of many other of our female domesticated animals, is of very ancient date. Most authors that have written on the castration of domesticated animals have said that it was practised on mares, cows, sheep, and swine, in order to increase their disposition to accumulate fat; but it is astonishing that not one of them has described this effect of the operation on the cow.—Y.]

M. Winn, a land-proprietor at Natchez, in Louisiana, in America, was the first person who practised this operation with the view of preserving for a longer time in the cow the quantity of milk which she yielded during the month after parturition. The following is the report of his early experiments taken from *Le Journal des Connaissances utiles, Fev.*, 1833.

"M. Winn was induced, by a course of experiments which he had instituted, to perform the operation of spaying on a cow a little while after she had calved, and at the time when she yielded most milk. She continued to yield milk for many years after this without interruption, and without any diminution beyond that which would arise from change of food. The operation was performed a month after she had produced her third calf. It was far from being a very painful one, and the fever which followed was neither considerable nor of long continuance. The wound was healed in a few days, and she soon began to give as much milk as before. She died in consequence of an accident some years afterwards.

"He then spayed a second cow, and with the same success; but she also perished, being staked in leaping over a fence.

"Being, however, fully assured of the advantages to be derived

from the operation, M. Winn castrated two other valuable cows, and, determined to avoid the casualties by which the others had been destroyed, he resolved to keep them in the cow-house, or in some inclosed place in which no harm could come to them; and he kept them there, and fed them well during a whole year.

"This experiment completely confirmed the value of the operation when it is desired to reserve the cows as milkers; and an American traveller, who saw these cows, three years after they had been spayed, was assured by M. Winn, that they had constantly given the same quantity of milk during the whole of the time, and he was convinced that they were in as good condition as could possibly be desired."

M. Winn has been dead some years. He was a well-informed man, and much respected at Natchez. He had refused to make the discovery public at first, because he feared that there was no novelty in it; and afterwards he thought that the very nature of it would render it ridiculous in the estimation of those who had not had actual experience of its value.

The operation ought to be performed between the twentieth and thirty-sixth day after calving, on a sound cow and in good health, and after her second or third calving, for that was the time when she yielded the greatest quantity of milk, and her œstrum had not then returned—a circumstance that was to be avoided with the greatest care. No preparation was necessary before the operation, except not to give the usual quantity of food on the preceding night, and to effect the operation before she ate on the following morning.

The spaying might be performed on cows of all ages and at all seasons, but it would answer better on young cattle; and, if it were convenient, should take place on some fine morning in the spring or autumn.

The method in which M. Levrat was accustomed to perform the operation of spaying has been already related in the eighth volume of The Veterinarian, p. 453, but he has since somewhat altered his mode of proceeding; we adopt his own language:—

The cow being fixed as before described, I no longer use the bar of wood which was placed in front of her hind legs, but I confine them by means of a cord passed round them in the form of a figure of 8, and secured with a running knot.

Having made the proper incision, and found the ovaries, as formerly mentioned, I seize one of them, and with the thumb on one side and the middle finger on the other break through the layers of the ligaments of the ovary immediately above that organ, and by a motion of the thumb from the right to the left, or from before backwards, as it regards the ovary, I detach the

greater part of it in such a manner, that it is held only by two peduncles, the one anteriorly and the other posteriorly. I now seize the anterior peduncle between the thumb and the index finger, and, by means of the nail of the thumb, I cut or scrape through the ligamentous portion, which is the hardest. When this portion is cut through, I give the ovary a half-turn, and, continuing to work away with my nail, and pulling gently as I proceed, I break through the peduncle. I proceed in the same manner with the posterior peduncle, with the precaution of not breaking it by twisting it too tightly. As soon as the ligament is sufficiently cut through, the rest easily yields. The operator, whose thumb-nail is too short or too weak to scrape through the ligamentous portion of these organs, may effect his purpose by means of a blunt-pointed bistoury.

The ovaries being thus removed, I bring together the lips of the wound, and confine them by means of the interrupted suture.

The incision into the abdomen must not be kept too long open, especially in cold weather. If any small arterial vessel should continue to bleed after the ovaries are separated, the hemorrhage must be stopped by means of the torsion forceps. The blood should be absorbed by means of sponge or lint, and the wound closed as quickly as possible.

I have also practised the spaying of the cow in another way, which seems to deserve the attention of the veterinary surgeon, namely, destroying the action of the ovaries by the application of torsion to their vessels.

After having penetrated through the layers of the suspensory ligaments of the ovary, immediately above that organ, as already described (having taken care not to make the opening larger than is necessary for the passage of the ovary), I twist it twice upon itself from left to right, with relation to the body of the animal. After that I press each of the peduncles of the ovary between my thumb and index finger, in order to diminish as much as possible the elasticity of the parts. That being done, I take the ovary thus twisted in my hand; I raise it in order to reach about three fingers' breadth above the layers of the ligament of the ovary: I seize them with the points of my fingers; then I pierce them anew with my middle finger; I introduce the ovary through them by a movement of the thumb, and one of my fingers seizes it on the opposite side, care being taken to draw it in a horizontal direction, in order not to enlarge the aperture too much. When one ovary is sufficiently entangled to be retained in its situation by its own proper weight, I operate in the same manner upon the other, and then close the opening into the flank in the way already described.

In order to operate in this way, it will be necessary to practise often on cows that are destroyed at the slaughter-house, and so to obtain sufficient dexterity in the performance of these manipulations. It is also necessary that the nails of the thumb and middle finger of the right hand should be long, and rounded at the extremity.

The operation being performed either in the one way or the other, the cow should be led back to her stall, and the person that is most accustomed to her should be with her and caress her; and a little salt should be given to her with the hand, or on some moistened bran. An hour afterwards a little dry meat may be given to her, and she may have warm water with some barley or other meal in it to drink. Her food should be given to her in small quantities, and her meal and water or gruel should be warm until the sixth or eighth day, when she may return to her usual provender, or be turned to grass if the season will permit. During this time it will be necessary to avoid direct exposure to cold, and especially all currents of air.

When the cow has been taken back to her stall, the wound should be bathed with cold water several times in the day. On the following morning she should be bled while fasting. This bleeding will be particularly useful if any inflammatory smptoms begin to develope themselves, as will sometimes be the case in cows of irritable habits.

Sometimes immediately after the operation the cows will grind their teeth, and the lower jaw will be partially fixed, in which case the administration of two spoonfuls of sulphuric ether in a bottle of cold water will be useful.

If the cow does not ruminate, or constipation ensues, or the dung is hard, a pound of Glauber's salt should be administered, dissolved in warm water. If at the expiration of twenty-four hours she has not dunged, the dose should be repeated; frequent mucilaginous drinks, and particularly barley-water, administered, and oily mucilaginous injections thrown up.

After the spaying, the milk diminishes all at once, but it insensibly returns. Some almost immediately yield the same quantity of milk that they were accustomed to do; with others six, eight, fifteen, or even twenty days pass before the secretion is perfectly re-established. This much depends on the degree of fever that follows the operation, and the irritability of the patient. The state of the wound may also have considerable influence.

I cannot, perhaps, better conclude than by relating a few cases of the performance of this operation, and with reference to the general health of the cow, the quantity of milk yielded, and the tendency to fatten.

Case I.—*May* 1832. I operated on a cow that was in a state of rapid emaciation. She did not yield any milk, but she quickly regained her ordinary habits and good condition.

Case II.—*June 28th*, 1833. I operated on a cow of M. Francillon-Michaud, a distinguished and zealous agriculturist, residing near Lausanne. This cow, six years old, gave, in the preceding years, eight pots of milk soon after calving, and, during part of the summer, six pots*. After the operation she yielded, when at grass, nine pots; and, when fed on hay, seven pots. M. Manchillon has averaged her produce of milk during twenty-eight months at six pots and a quart per day. After that time she began to get very fat, still however yielding four pots of milk every day. She was sent to the butcher in October 1835, being then in excellent condition.

Case III.—Encouraged by this success, M. Francolin begged me to operate on a second cow, of the Schwytz breed, thirteen or fourteen years old, and that had had eight calves. She yielded, soon after calving, twelve pots of milk per day. The average quantity of milk during the preceding years had been about eight pots per day. This cow was submitted to the operation on the 18th of November, 1833, thirty-three days after she had produced two calves. She had suffered very much in the calving, and there was a muco-purulent discharge from the vulva when I operated. She seemed to suffer very little from the operation. She produced while she was at grass eleven pots of milk per day, and gave on an average seven pots and three-quarters per day. After this time she began to get fat on her ordinary food; still, however, continuing to give six pots of milk daily. In March 1836, she was sent to the butcher in the best condition, and sold for one-third more than her owner had calculated upon.

Case IV.—A cow, eleven years old, and that had had eight calves, was spayed on the 24th of December, 1833. She yielded immediately after her calving ten pots of milk. During the winter she yielded seven pots; and during the following summer, and while she was supplied with green food, from seven and a half pots to eight daily. She has given on the average during fifteen months six pots of milk per day. She then began to get fat, after which she yielded four pots a-day; and on the 30th of April, 1835, she was delivered to the butcher in the highest state condition.

Case V.—On the 6th of January, 1834, I operated on a young cow, three years and a half old, thirty-three days after she had

* A pot is equal to 45 oz., or rather more than 2¾ pints.

calved. She gave about eight and a half pots daily of clear serous milk. She did not lose a single meal in consequence of the operation. As early as the eleventh day her milk returned, but it had become much more creamy than before the spaying. She continued to give the same quantity of milk, but of a better character, for eight months, when she ate some poisonous mushrooms. The swelling came on so rapidly, and to so great an extent, that she was destroyed.

Case VI.—On the 8th of March, 1834, a cow, belonging to M. Francillon, eight years old, and having had five calves, was spayed thirty days after her calving. She yielded before the operation nine pots of milk daily. During many months she continued to yield eight or nine pots, according to the goodness of her keep, and then the milk began to diminish gradually in proportion as she got fat.

M. Francillon calculated that during ten months she yielded on an average at least seven pots of milk per day; then she began rapidly to grow fat, and the milk diminished to one pot. It is, however, to be observed that this cow, which had been vicious, and which had seemed to have forgotten her vicious habits after she had been spayed, began again to exhibit all her former tricks as she got into condition, and it at length became necessary to trammel her, in order to milk her without danger. She fought stoutly against this, and this constant struggle might have materially contributed to the diminution of her milk. In spite of all these things she accumulated flesh and fat, and was killed in good condition, for the supply of the household of M. Francillon, in March 1835.

Case VII.—On the 10th of March, in the same year, M. Miliquet requested me to spay a cow that had had a calf four months before. Having understood that she was at heat, I refused to operate, explaining to M. Miliquet the danger that would ensue from spaying a cow in that condition. I told him that, although I had not yet acquired any experience on this point, I deemed it prudent to defer the operation for some days. He replied that the cow would not remain at heat more than twenty-four hours, and entreated me not to delay the operation, since he was, on the following week, compelled to go into a neighbouring canton to purchase cows. The operation was performed without any hemorrhage, a point which the proprietor himself remarked. During that day she did not appear to have suffered materially from the operation, but towards the evening of the following day she was dull, and refused to eat. Instead of sending for me, M. Miliquet went to consult the cowherd of M. Francillon, who told him that he had nothing to fear. On the following morn-

ing, however, she was found dead. The post-mortem examination discovered a slow internal hemorrhage from the vessels of the ovaries, and yet there was not found more than four or five pounds of blood, coagulated and very black. I may add, that M. Miliquet has done me the justice to acknowledge that I took all possible pains to make him aware of the danger which would attend the performance of the operation during the œstrum of the animal.

Case VIII.—On the 15th of May I spayed a cow that had had a calf three months before, whose milk was completely dry, and who was incessantly bulling. On the fourth or fifth day after the operation she appeared to have some degree of fever, but on the eleventh day she was quite well again. Three months afterwards she was sent to the butcher, and her beautiful condition was the remark of many amateurs.

Case IX.—On the 16th of July, in despite of the oppressive heat which prevailed, I operated on a cow belonging to M. Francillon. She was about six years and a half old, and had had three calves. Soon after calving she had yielded twelve pots of milk, but at the time of operation she gave only ten. The wound healed by the first intention, but the cow had some slight degree of fever. Soon after the operation the scarcity of fodder compelled them to allow her only one-third of grass and two-thirds of dry food, but, in despite of this diminution of succulent food, she continued to give from nine to ten pots of milk during the summer and the autumn, until the time when all cows are usually put on dry food. Her milk diminished until the following spring, when it again began to increase. She yielded on the average seven pots and a half daily of milk during sixteen months; but about the close of that time she was in good condition, still yielding six pots of milk every day. She was sold to the butcher on the 25th of March, 1836.

Rec. de Méd. Vet., Juillet 1838.

[To be continued.]

Miscellanea.

The Human Being and the Dog.

[Extract of a Letter from Dr. Forster, of Bruxelles.]

In taking a retrospect of the history of man from the remotest times, the collateral history of the dog casts thereon a melancholy shadow, which deadens its lustre, and shews us the ingratitude and vicious selfishness of our species in their worst and truest

point of view. The dog, constant to his master, exhibits from first to last a gratifying example of unshaken fidelity. The master, too generally faithless to the dog from the moment when his utility ceases, presents a disgusting picture of base cupidity and ingratitude. Like the black slave, whom the white Christian scourges at his work while he insults him with the title of a brother, the dog, bearing the false name of a friend, is treated by his master as if he were his worst enemy; he is hunted, beaten, harnessed to carts, and made to do every sort of work; and undergoes a larger share of oppression than falls to the lot of other animals: and when his services are over, he is either left, like the old servants of tender-hearted gentility, to shift for himself, and gain a miserable subsistence on a muckheap in the street, or unceremoniously flung into a river and drowned, like the superfluous children of the Chinese—and this, too, after the most eminently useful and acknowledged services. Man, as general oppressor, seems to taint every thing which he touches. Depraved in his own appetites, and suffering from a thousand moral and physical ills which his perverted passions have entailed on him, he seems capable of transferring, by domestication, many of his disorders to the brute creation; and thus the tame dog and the horse have engendered various distempers unknown to the wild specimens. This is a curious reflection, and it leads to another,—namely, whether the punishment that follows deviations from nature, both moral and physical, does not attach itself to other animals as well as to man. The constant warfare of all animated beings is an awful spectacle of life supported by death throughout all the creation.

English Short Horns.

The following is extracted from the "*Journal des Haras,*" August, 1838. The Editor of that Journal is speaking:—"At last the truth has conquered, and by dint of repetition—that a valuable breed of cattle not only cannot flourish, but cannot even exist, without a very considerable outlay, we have at length been heard, and our demand is about to be listened to. The Ministry of Commerce and Agriculture has decided that a herd of English short-horned Durham cattle, and other valuable breeds, shall be purchased and placed in the stud at Pin. Messrs. Yvart, inspector of the veterinary schools, and Sainte-Marie, the inspector of 'Haras,' at Pin, are charged with the selection and purchase of these cattle."

Second Sight.

[Extract of a Letter from Dr. Forster, of Bruxelles.]

I must mention an odd circumstance which occurred about two months before the death of my favourite dog. He was sleeping at dusk on the sofa, which he usually occupied, when I saw with great distinctness, as I thought, a white dog, having precisely his form and size, cross the room at a rapid rate. I presently ascertained this to be merely one of those phantoms of the imagination which often occur when one has long nursed a sick friend, or been intent on any one particular object. I could relate a hundred such cases: they are not rare, and constitute what, in Scotland, is called *second sight*; they occur before death, as it seems, because it is by the forms of dying persons long cherished or nursed that the imagination is most strongly affected, particularly in individuals who have the requisite cerebral organization. I mention the circumstance here only to shew how complete is the parallel between the death of men and other animals, even in the most minute particulars of those supernatural appearances which are said to hover round them, and which are capable, by their coincidence with coming events, of exciting very marvellous ideas.

The Symptoms accompanying a Case of enlarged and ruptured Liver.

By Mr. J. P. Cheetham, *London.*

[In a box which has for many a long month been unexamined, we found the following sketch. We add it to the few but valuable notes of the symptoms of Hepatirrhœa which the third and fourth volumes of our Journal contain. The liver in this case was exceedingly enlarged and softened; the fissure in the peritoneal coat was not very extensive, but the abdomen was deluged with blood.—Y.]

From the desire which you expressed to have the symptoms of my poor patient recorded, I am induced to send you the following sketch:—

A black dray-horse, nearly seventeen years old, and in high condition, came from a journey of twenty miles. Nothing appeared to ail him until he entered the stable, and then he began to evince what seemed to be colicky pains, attended, however, with an appearance of exhaustion that was very striking. The

pulse was 48, languid, and weak. The surface of his body was soon bedewed with cold perspiration, and the uneasiness rapidly increased—he pawed considerably, yet his breathing was very little disturbed.

An ounce each of laudanum and spirit of nitrous ether was administered, properly diluted, but with very trivial mitigation of the symptoms.

I then set six men to work to rub him until he became dry and warm, and then turned him into a loose box. He immediately lay down, and turned his muzzle towards his side. The pulse was still 48, and very little altered from its former languid character. I had him raised, and I attempted to extract a little blood; but I met with considerable difficulty in finding the vein. Before eight ounces of blood had flowed, symptoms of fainting occurred, and I hastily closed the orifice. He began again to perspire profusely. His cloth was removed, and he was again rubbed dry. By the use of ventilation and internal stimulants the faintness disappeared; but his pulse now suddenly and fearfully changed. It rose in a very few minutes to 120; but it was fluttering, and almost imperceptible. Partial sweats broke out about him—the mucous membranes of the mouth and nose assumed a deathy paleness—the pupils became greatly dilated, and the eyes were insensible to light: the respiration, however, was but slightly affected, except that there was an occasional sobbing inspiration. By the use of stimulants and restoratives he lived twenty-three hours after his first attack, and then died, almost without a struggle.

Cavalry Stables in France.

The following is the appeal of a French cavalry officer to his brethren:—

"A commission having been appointed to-day, to decide on the measures which it will be useful to adopt, in order to ameliorate the state of the barracks, with reference to the comfort and health of the horse, it is the duty of every cavalry officer to give his opinion of the improvements in contemplation, the urgency of which cannot for a moment be denied.

"A few days ago the ninth regiment of Chasseurs arrived at Auch, and found the stables so miserably constructed that the greater part of the officers refused to let their horses go into them.

"By allowing a *metre* (39.37100 English inches) to each animal, the quartermasters have been able to cram twenty-nine

horses into each stable; but the lowness of the ceiling, and the deficiency of apertures for the supply of air were so great, compared with such a number of horses, that, in order to avoid the most infectious diseases, it has been necessary to leave the doors and windows open day and night,—an expedient which, while it may preserve the greater number of them, will inevitably destroy some.

"The floor is formed of pebbles, and many of them of the smallest size. The urine is easily absorbed through the spaces between them, and so perfect is this infiltration, that not a drop of fluid runs or is swept out of the stable. Many pails of this fluid are consequently imbibed by the soil, or, evaporating, mix with the atmosphere of the stables.

"The horses nearly touching each other, the floor is always wet, and the emanations from this focus of infection are such as no animal can possibly bear, unless the windows are always open.

"Applications have been made to the competent authorities to lessen the number of horses in each stable, and to let four only occupy the room now taken up by five, an alteration acknowledged to be necessary, and which has already been granted in many of the cavalry barracks. The authorities refused us, saying, that a man of talent who had constructed the stables, had assigned one metre as the proper space to be occupied by one horse, and that the old stalls must be occupied.

"It may, perhaps, be thought that these stables have been many years constructed—alas, no! they have just been built—some of them are not yet finished.

"Since, then, a commission has been at last appointed, and attention has been directed to the subject, let us hope that no delay will take place, for these ill-constructed buildings are costing France more than a thousand francs a day. Especially let it not be forgotten, that reform on two points is absolutely indispensable.

"One, and which draws after it no expense, is the diminution of the number of horses in each stable in proportion to the height of the roof, the quality of the soil, and the apertures for ventilation; and this, which would vary considerably in different stables, to be entrusted, not to these men of talent—not to the usual inspectors, but to veterinary surgeons, and the council of administration in the various corps, who alone are competent to the task. The other improvement, and which cannot be too much insisted upon, is to repair the pavement of the stables, and to fill up with cement the spaces between the pebbles, and particularly at the places where the urine falls, and thus to render it

easy for the stable to be thoroughly cleansed from time to time. Then alone, brother officers, shall we have ground to hope that we shall no longer see our best horses perishing before they have rendered the state service, and that the Government will no longer purchase them only to lose them.

"A. des Bourdeliers,
"Captain of the Ninth Chasseurs."

We cordially agree with the author of the above document, and which we most readily publish. We unite with him in demanding the adoption of measures like those which he has described, in order that the frightful mortality which, beyond all comparison with what is observed in the armies of other countries, prevails in the French cavalry may be staid. It is calculated that the Prussian and the Wurtemburgh cavalry are remounted once in fourteen years; while a seventh part of our horses are destroyed by glanders every year. If this improvement is scientifically and honestly carried on, the expenses which may attend it, let them be as great as they will, will speedily appear to be the exercise of the truest economy.

Let us hope that the commission alluded to will be fully conscious of the importance of the task which it is appointed to execute, and a new æra will commence for the poor cavalry-horse, hitherto so shamefully maltreated in France.—A. de M.

Journal des Haras, Juin 1838.

Our Forefathers' Opinions.—Farcy,

Is an inflammatory state of the blood, gradually increasing to the greatest pitch of acrimony, and affecting the system by degrees, till the whole mass is corrupted. Although the attack may be local, the course being inflammatory, it must soon be universal, from the very nature of the circulation.

From a MS. of the last Century.

Splent.

A splent is an enlargement of the membrane covering the bone. By a rupture of the small vessels the fluid collected becomes ossified, and constitutes a bony substance.

Ibid.

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ON RABIES.

By Professor O. Delafond, *of Alfort.*

[Since the last lecture on Rabies was printed, we have had the honour of receiving from Professor Delafond a most valuable work, just published, on "the Sanitary Police of all domesticated Animals." On the very earliest opportunity we will present our readers with a review of it. In the meantime, we extract his opinion of the nature and causes of Rabies. Had the work sooner come into our possession, we should have enriched our lectures with many a valuable remark; but, perhaps, it is better as it is. The opinions of the French and English schools will be more pleasantly and profitably contrasted. In that spirit of mutual good feeling which, we trust, is beginning to prevail, and ever will subsist between the continental and English veterinarians, we translate the section on Rabies, without a single comment. Let our readers on both sides of the channel form their own unbiassed judgment.—Y.]

RABIES is a malady peculiar to the dog and cat species, the seat and the nature of which are not yet sufficiently known. It is contagious with regard to man, and every species of animal;—its name alone terrifies, and it is, unfortunately, incurable. We will not speak of the causes of rabies—they are foreign to the subject on which we are now treating. We will only say, that dogs particularly, cats, wolves, foxes, and badgers, have rabies spontaneously *(Spontaneous Rabies)*; and that men, horses, cattle, sheep, and swine, also have the same disease; but it is always transmitted to them by the preceding classes of animals *(Communicated Rabies)*.

Rabies attacks the dog at all seasons of the year; but, according to some authors, rabid animals are more numerous in May and September, and more rare in January and March than in any other months of the year. Although this calculation is founded on one hundred and fourteen indisputable facts, it is not, perhaps,

correct to say that such will be the character of these months in every year. Experience has demonstrated, and observation has convinced us, that it is at the beginning of the heat of summer, and towards its end, that the greatest number of rabid dogs are found in France. Climate has also some influence on the development of rabies. It is very rare in the torrid zone; it has never been seen in Egypt, Syria, or Constantinople; and it also appears to be unknown within the polar circles.

The long-continued privation of food or of drink can never occasion rabies. The experiments of Redi and of Bourgelat are positive on this point. We can say as much with regard to the non-gratification of the sexual appetite in these animals; and also the fits, rage, and fury, to which they occasionally abandon themselves, and to which they are disgracefully trained; and also the want of cutaneous transpiration in the dog. The causes of spontaneous rabies in the dog are altogether unknown.

A. *Distinction.* We distinguish two kinds of rabies in the dog. The one which is contagious is *the true rabies:* the other, the contagion of which is yet doubtful, is *dumb madness.* It will be advantageous to establish some characters, although few in number, by which we can distinguish them from each other.

THE TRUE RABIES OF THE DOG.

Principal Symptoms.

First day.—Commencement.

Barking, or rather a kind of howling, deep and hoarse; heard principally during the night, and occasionally in the day.

Second and third days.—Increase and march of the disease.

The eyes brilliant, wandering, and menacing, with desire to bite men and animals. Sometimes an appearance along the frænulum of the tongue of small vesicles, elongated or round, white, and inclosing a serous fluid (the supposed characteristic pustules of Marochetti). The animals seize and devour unnatural substances, such as hay, grass, earth. They have no dread of water—they are frightened at polished bodies—they cannot swallow soft or liquid food—they are continually unquiet and moving about. There are fits of rage, during which

THE FALSE OR DUMB MADNESS OF THE DOG.

Principal Symptoms.

First day.—Commencement.

Barking, with a tone approaching to true rabies, but heard particularly when the animal is excited. The mouth is half open, and the saliva is abundant.

Second and third days.—Increase and march of the disease.

A stupid expression of countenance—no desire to bite—the dog is not anxious to eat or to drink—the jaws are permanently separated from each other. The buccal membrane is of a deep red—the pharynx and the veil of the palate are of a reddish brown. The patient is unable to bite either the animate or inanimate bodies around him, but he endeavours gently to grasp any object that attracts his attention. He cannot lap fluids. The countenance is always stupid; the attitudes express weariness or weakness, and the movements are

they rush on men or animals, or any objects around them, and bite and tear them with fury. The saliva is abundant, sometimes liquid, and sometimes composed of an adhesive foam. *The saliva is poisonous, and transmits the disease.*

Often the dog quits his master and his usual dwelling, and wanders about the country; it is then that he bites dogs, and men, and animals, that he meets in his way.

The fourth or fifth day, or longer.—Termination of the disease.

The muscles which close the jaw are paralyzed, and the dog is no longer able to bite. The mouth is half open; there is a staggering motion referrible to the hind limbs, and sometimes there is absolute palsy.—Death.

Morbid Lesions.

The Respiratory Organs.—The nasal cavities are healthy; there are some ecchymoses on the larynx, and also in the bronchi and the lungs.

The Digestive Organs.—Some irregular erosions on the mucous membrane on each side of the frænum of the tongue, or, rather, the presence of the vesicles of which mention has been made.

Light redness of the pharynx—the stomach contracted, and filled with foreign bodies, as hay, hair, earth, wood, and leather. A vivid redness on the summit of the rugæ of the stomach. Sometimes slight erosions succeeding to black spots. The intestines containing little or no aliment, and in other respects being sound.

Circulatory Organs.—Nothing remarkable.

Cerebral Organs.—Injection and ecchymoses on the pia mater. The cerebrum and cerebellum sound. Red points on the arachnoid membrane, and the pia mater of the spinal cord. The grey substance of the spinal marrow injected and red; sometimes slightly softened, especially about the lumbar region.

Genito-urinary Organs.—Nothing remarkable.

slow. *The saliva, according to some, is not poisonous;* it will not transmit the disease. If sometimes the disease has been transmitted, it is when the dumb madness has been confounded with *true rabies,* in that period of it when the mouth is sometimes open.

The dog does not usually quit the abode of his master, or, if he occasionally does, he wanders about the country, but without any desire or attempt to bite.

The third or fourth day at most.—Termination of the disease.

The mouth continues open, and there is feebleness of every limb.—Death.

Morbid Lesions.

The Respiratory Organs. — The same lesions as in true madness.

The Digestive Organs.—The veil of the palate and the pharynx red: injection of the capillary vessels, disappearing under a small stream of water. The stomach sometimes containing foreign bodies, and red patches and spots of a browner colour, and ulcerations. The intestines in their normal state.

Circulatory Organs.—Nothing remarkable.

Cerebral Organs. — Nothing remarkable.

Genito-urinary Organs.—Nothing remarkable.

The preceding table shews that, in following the march of the two maladies, it is possible to distinguish them from each other; but that, on an examination after death, there is not sufficient distinction between them to warrant us in affirming any thing decisive.

B. *Contagion.* A great number of unfortunate cases have too well proved that rabies in the dog, the fox, the wolf, and the cat, *are contagious as it regards man and our principal domesticated animals.* The poisonous principle resides *in the saliva,* which, deposited in the wounds made by the teeth, and afterwards absorbed, occasions rabies, although the wounds are often rapidly healed.

C. *Incubation.* The virus introduced into the system does not cause rabies until an uncertain period, both in the human being and in animals. The period of incubation in man is from thirty to forty days: it sometimes extends to two or three months, and, according to some authors, the disease has not appeared until two years after the bite. Among animals, Brendt says, that rabies never appears until after the cicatrization of the bite; and also, according to him, it sooner attacks the young subject than the adult.

In calves the disease is usually developed between the third and the fourth week; in full grown cattle, not until the sixth or ninth week, or even later. Among horses, it generally appears a little after the ninth week; and, in pigs, towards the commencement of the fourth. According to Hertwig, rabies ordinarily declares itself within fifty days after the inoculation, accidental or artificial. He has never seen it developed much later. It has been stated at the school at Alfort, that no danger exists after the fiftieth day. We think it impossible to fix any determinate time for the incubation of the disease. We have seen it manifested in dogs from the tenth day to the fourth month. Peyronnie has seen it declare itself on the seventy-second and on the ninety-second day; Vatel, after sixty-four days in the goat; Thorel, after forty-four days in the hog; and Gervi, after two years in the same animal.

The precursor symptoms in rabies manifest themselves at the wound and through the whole system. Regarded as connected with the sanitary police, the observation of these symptoms is very important. An itching or pain manifests itself at the place that was bitten, and the animal licks or scratches the part. The cicatrix becomes red, and bleeds; the wound opens, and rabies appears. These premonitory symptoms, however, do not always develope themselves. Whatever else may be the case, the attack of rabies is announced in the dog by a hoarse baying and a disposition to bite;—in the horse, to bite and to strike with the fore-

foot;—in oxen, by a hoarse bellowing, and the attacking of both animate and inanimate bodies with the horns;— in the cow, by furor uterinus;—in sheep, by butting with the head, various disordered movements, and riding the other sheep;—in the hog, by most singular and strange actions, by peculiar squeaking and an attempt to bite; and, finally, in all animals, by an abundant discharge of saliva, and a depraved taste with regard to wholesome and unwholesome food.

D. *Of the contagion or non-contagion of rabies in the herbivorous animals, as it regards the human being and the domesticated animals.*—We have said that the contagion of rabies in the dog is evident and positive. Is it so with the herbivorous animals? The facts which favour the non-contagion of rabies in these animals are more numerous and authentic than those that go to prove the reality of the contagion.

1. *Contagion.*—A cow, bitten by a mad dog, and having become mad herself, bit in the shoulder the cowherd who took care of her. Six weeks after the bite the unfortunate man exhibited symptoms of rabies, and died of that malady.

Brandt made an incision, an inch long, in the skin of four sheep. The foam that was taken from the mouth of a rabid ox was rubbed into these incisions, and the animals were then abandoned to themselves without any dressing being applied to the wounds. The cicatrization was terminated towards the end of the third week. The first became rabid on the twenty-second day after the inoculation, the second on the sixtieth, the third on the sixty-third, and the fourth on the sixty-fourth.

Professor Breschet says, that he had perfectly convinced himself that rabies could be transmitted by inoculation with the saliva of rabid horses, asses, and oxen. It is to be regretted that M. Breschet has given us no detailed account of these convincing experiments, so that we might have judged of them for ourselves. He would then have stamped them with a character of authenticity, which they have not at present.

These are the only facts with which we are acquainted that tend to prove the contagiousness of rabies with regard to herbivorous animals. We may invoke, to a certain point, to the confirmation of them, and as tending to prove that the carnivora alone have not the sad prerogative of this transmission, the experiment of MM. Magendie and Breschet. On the 19th of June, 1813, these two physicians inoculated two healthy dogs with the saliva taken from a man labouring under hydrophobia. One of them died rabid on the 27th of July, after having bitten two other dogs, one of which died on the 28th of August, exhibiting the characters of furious madness.

2. *Non-contagion.*—It results from experiments made by Dr. Betti, surgeon to the principal hospital at Florence, 1st, That sheep, and other animals of the same species, cannot communicate the rabies which they have derived from a dog, even although this dog died rabid. 2d, That the rabid virus loses its contagious property in passing through these animals; and, 3d, That neither the saliva of these animals, nor any other fluid, nor any solid belonging to them, can produce rabies by inoculation, or in any other manner.

It is recorded in *le compte rendu* of the veterinary school at Lyons, in 1810, that a rabid ass was made to bite several animals, and that others were inoculated with his saliva, but without any morbid result.

In July 1728, MM. Girard and Vatel inoculated with the saliva of two rabid sheep, and at different stages of the disease, a horse, two dogs, and three sheep. The epidermis was slightly excised, and the saliva applied to the wounds in three different places, viz. about the nostrils in the horse, and the forehead and the back in the dogs and sheep. Four months after the experiment, neither of these animals had exhibited the slightest symptom of rabies.

M. Huzard, sen., in a memoir which he presented to the Institute of France, declares it to be his opinion that herbivorous quadrupeds having rabies, cannot transmit it. M. Dupuy says, that he had attempted, without success, to inoculate other animals with the saliva from herbivorous rabid ones, and that he had known rabid sheep biting other sheep, without communicating the disease.

It results from these facts, reported on one side of the question and the other, that the contagiousness or non-contagiousness of rabies in the herbivora, whether as it respects the human being or the different domesticated animals, has not yet been decided. We have related some facts which tend to prove the virulence of the saliva in herbivorous animals. With some persons these proofs will probably be considered as doubtful. We confess that, even at the present day, a doubt, a painful doubt, exists on our minds with regard to this question; a doubt that we would fain see dissipated as soon as possible, and which induces us to urge that every measure of sanitary police should be adopted capable of preventing all possible accident in so fearful a case*.

* The regulations of the French police as it regards the keeping and management of dogs are most excellent; but they are of too great length to be now inserted. They shall appear in some early number of this Journal. Those which most concern the veterinary surgeon may, however, be given now.—Y.

A. *Declaration.*—Every proprietor of an animal, of whatever species, that has become rabid, shall give immediate information thereof to the mayor or the commissioner of police, under certain penalties.

B. *Visit, Destruction, or Confinement.*—The mayor or commissary, assisted by a veterinary surgeon, shall immediately visit the animal or animals supposed to be rabid, and shall adopt such measures as may be deemed expedient. On the declaration of the veterinary surgeon that the animal is rabid, whether it be a dog or any other quadruped, it shall be immediately destroyed. If there is doubt on the subject, the animal shall be chained up, and confined in a place from which he cannot possibly make his escape. The proprietor shall be strictly forbidden to remove him, or let him be removed, from that place. The civil authority shall likewise order that the proper medical or other treatment shall be adopted with regard to that animal.

If the dog or other animal is wandering on the public road, he shall be killed immediately, if the urgency of the case seems to require it; otherwise he shall be caught, and, by means of a strong collar and chain, secured in some convenient place.

The civil authority shall commission a veterinary surgeon to visit the animal from time to time, and to assure himself with regard to the real nature of the disease. This confinement will be always preferable to the destruction of the animal in every doubtful case, because it will be most satisfactory to any persons who may have been bitten, if it should happen that the dog gets well, or that some other disease had been mistaken for rabies.

C. *The Autopsy of Rabid Animals.*—Is it possible after the death of an animal to affirm, on the examination of his carcass, whether he was rabid at the time that he was destroyed, or died of rabies? The veterinary surgeon who is charged with the conducting of the post-mortem examination should proceed with the most scrupulous caution. Up to the present day, the numerous researches that have been made with regard to the lesions that positively characterize rabies have been most unsatisfactory: and, for ourselves, we confess that from the examination of any animal we could not, unconnected with the circumstances which occurred, or the symptoms which he exhibited during life, take upon us to determine that he was rabid. We acknowledge this, and without hesitation. We could only say, "*it is probable that he was rabid,*" when, on examination, we find, 1st, the rabid vesicles or ulcerations on each side of the frenulum of the tongue; 2d, foreign bodies in the stomach, and brown spots or ulcerations scattered here and there on the mucous membrane

of the stomach; 3d, the grey substance of the spinal marrow having become red or studded with minute red points, or slightly softened. It was wrong, then, for certain veterinary surgeons, after having opened an animal suspected of rabies, to declare to the authorities that that malady existed during the life of the animal, because they had found the bladder contracted, and without urine, and some foreign bodies in the stomach, and redness of the pharynx. In our opinion, these veterinarians committed a serious error. Some degree of probability could alone exist in such circumstances, but not the actual proof of rabies during the life of the animal.

As to the danger to which the veterinary surgeon is exposed in the examination of the carcass of the suspected dog, there may be some cause for fear, for no experiment has positively proved that the saliva or other fluids may not be occasionally exceedingly dangerous. We have read of an anatomist who died hydrophobous, in consequence of having dissected the carcass of a rabid dog. However that may be, the veterinary surgeon ought to have plenty of water at his disposal, and should well wash every part that he is desirous of examining. If he has wounds or excoriations on his hands, he should abstain from touching any portion of the dog, and conduct the examination as well as he can without it.

D. *The Use of the Milk and Flesh of Animals affected with Rabies:—*

The use of the milk.—The following facts are extracted from the Memoirs of the Faculty of Medicine at Paris, and from the work of Andry on Rabies:—

1st. Some peasants lived more than a month on the milk of a cow bitten by a mad dog, and suffered no inconvenience.

2d. An infant was fed on the milk of a goat until the very day on which she was recognized as being rabid. The infant came to no harm.

3d. A cow became rabid. The owner paid no attention to it, for he regarded the symptoms as belonging to quite another malady; and, requiring milk for an infant fifteen months old, this cow was fixed upon as the easiest to milk. The nutriment was given to the infant warm from the cow, and no ill consequence ensued.

On the other hand, Balthasar Timæus assures us that a peasant, his wife, his children, and several other persons, were seized with rabies in consequence of having drunk the milk of a rabid cow; that the father and the eldest of the children were saved by the adoption of proper means, but that the wife and two of the sons, and all the daughters, died hydrophobous; and that,

three or four months afterwards, the servant, and a neighbour with four children, who had drunk of the same milk, perished miserably, and all of them hydrophobous.

We will not trust ourselves with any observations on this subject, but will leave it to time and to experience to determine on the propriety of the use of the milk of cows suspected of being bitten or labouring under rabies. Nevertheless, we feel it to be our duty, until this matter is better understood, to advise those whom it may concern to refrain from the use of the milk of cows that have been bitten by rabid animals, or that labour under rabies.

2d. *The use of the meat.*—Lecamus, Principal of the Faculty of Medicine at Paris, assured his *confrere* Lorry that he had eaten, without the slightest bad effect, the flesh of animals that had died rabid.

On the 15th of June, there was sold at Médole, in the Duchy of Mantua, the carcass of an ox that had been bitten by a rabid dog, and that had exhibited all the symptoms of confirmed rabies before he was destroyed. Not one of the inhabitants of that village became hydrophobous.

In August 1836, we gave the tongue of a horse that had died rabid to a dog in the infirmary of the veterinary school at Alfort. He ate it up, and he remains in perfect health at the present day.

On the other hand, there are several facts on record that cannot be reconciled with these statements.

In 1553, a tavern-keeper in the Duchy of Wurtemburg served the flesh of a mad pig to travellers who were resting at his hotel. They were shortly afterwards attacked with rabies. This is given on the authority of Schenkius. Pierre Borel reports a similar fact.

Manget states, on the authority of Joseph Lanzoni, physician at Ferrara, that the whole of a peasant's family became rabid after eating of the flesh of a cow that had died of the same disease. Three of them died, but the rest were saved, *grâce à Dieu et aux remédes.*

The illustrious Boerhaave and Van Swieten consider that the flesh of animals that have died rabid is capable of communicating a similar disease to those who eat it.

The veterinary professor Gohier caused a dog to eat of the flesh of a rabid horse. On the nineteenth day he presented evident symptoms of rabies, and died of that malady. A similar experiment was made on two dogs, to which the flesh of a sheep that had died of rabies was given. Seventy days afterwards one of these dogs became rabid, and died.

These facts are of somewhat ancient date, and we dare not to answer for the exact truth of them; but it will always be prudent to avoid the flesh of oxen, sheep, or swine, that have been destroyed under the supposition of their being rabid, or who have died rabid. In case of the death of one of these animals, the carcass—skin, flesh and all—should, according to circumstances, be buried from three to ten feet deep, and the ground should be well beaten down, and planted with thorns.

E. *Disinfection.*—For this purpose it will be sufficient to wash with boiling water the place in which rabid animals have been kept, having carefully scraped away the saliva from every place that could possibly be soiled with it.

Measures to be taken with regard to Animals bitten by Rabid Dogs.

A. *Earliest measures.*—As soon as an animal has been attacked by a rabid dog, or one supposed to be so, the first duty will be to examine every part of him most carefully, and then to wash him, and to cut the hair from every suspicious place. The slightest excoriations or scratches will be as dangerous as a decided wound; therefore they ought to be well pressed, in order to force the blood from them, and then washed with warm water or with urine, and afterwards cauterized with the red hot iron. All deeper wounds should be sounded and dilated if necessary, their edges pared, the torn fragments cut away, and then thoroughly washed, and finally cauterized with the red hot iron, the caustic potash, or the butyr of antimony.

B. *Destruction of the dogs.*—Every dog that has been bitten by a rabid one, should be destroyed on the spot. The civil authorities have full power to carry this into execution. When they reflect on the frightful and irremediable accidents which may occur from suffering a dog to live that has been bitten, and that will be sooner or later mad, the authorities ought to be inexorable, whatever may be the rank and condition of the owner, or whatever his attachment to the dog.

C. *Confinement.*—If the dog has been only turned over, and no wound can be found, or if the wounds have been treated in the way just described, the authorities may be justified in contenting themselves with the confinement of the dog, accompanied and followed by certain precautions indispensable for the public safety.

Bader and Capello have endeavoured to prove, by cases that have come before them in the usual way, and by experiments, that the saliva of dogs labouring under *communicated* rabies contains no rabid virus, and that a dog bitten by another that

has been attacked by spontaneous rabies cannot transmit the disease to others. Hertwig, of Berlin, has instituted various experiments on this interesting subject, which prove that there is little or no foundation for this opinion. We should not, therefore, be justified in neglecting the confinement of every animal that is suspected of having been bitten by a rabid dog.

In the department of the Seine, the commissaries of police bring every dog that is suspected to have been bitten to the school at Alfort, where he is placed in a kennel devoted to this purpose, and carefully watched. It is the same at Lyons and Toulouse, and the neighbourhood of these two cities: but in every other situation the dog ought to be placed under lock and key, and secured by a chain, and carefully watched, and destroyed the moment that the peculiar howl is heard which we have described as the *avant-courier* of the appearance of rabies.

The duration of the confinement should not be less than sixteen days; and after that lapse of time, and during the two following months, the dog should not be suffered to range at liberty without being carefully muzzled.

D. *The confinement of horses and cattle.*—Horses and beasts, bitten by mad dogs, should not be suffered to range on any common pasturage, or to drink from the open pool. They should be kept in the stable, or in places at a distance from other animals, and appropriated to themselves alone.

Sorel Baudieu has related two facts which render it probable that the saliva of rabid cattle and sheep may be deposited on the herbage, and browsed upon by animals of the same species, and the disease thus communicated. Although this supposition is controverted by Hertwig, who caused twenty-two dogs to swallow the saliva procured from rabid dogs, and not one of them was infected, yet, if these suspected or infected animals are kept, they should be fastened in places altogether distinct from those to which others have access.

Horses, asses, and mules, may be worked during this period of sequestration, but they should be muzzled, in order to prevent possible accidents. Their period of sequestration or confinement should not be less than two months. During that time, they ought not to be exposed in any markets or public places, nor should they be sold to the butcher until three months have passed. Every one neglecting these precautionary measures should be fined one hundred francs at least.

ON IDIOPATHIC DISEASE OF THE TENDONS.

By Mr. Hugh Ferguson, *London.*

Those parts of tendons that have a demi-cartilaginous character, and are inclosed in synovial thecæ, are subject to a degeneration of structure accompanied by a loss of substance, of which, I believe, no veterinary author has taken any notice.

The lesion to which I allude results from an absorption of the cellular tissue uniting the fibres of the tendon together, and also of some of the fibrous structure itself. It is more frequently met with in the horse than in any other of our domestic animals, and in the old and debilitated subject oftener than in the young and robust one. I have, however, more than once, seen it in horses under five years of age.

On examining those portions of the tendon of the *epicondilo-phalangeus* (*flexor pedis perforans* of Percivall) that are situated in the thecæ, posterior to the carpal and metacarpo-phalangean articulations, I have at different times, found a cavity varying much in size, and occupying the body of the tendon. It generally communicated by a long slit or aperture with the interior of the theca, and contained a quantity of tendinous shreds of various lengths, which, from their shape and manner of being coiled together, might easily be mistaken for a number of long thin yellow worms. Indeed, on shewing them to a very celebrated French veterinarian and anatomist, he immediately and unhesitatingly pronounced them to be parasites. I have observed, on making transverse sections of tendons thus affected, that the cavity generally extends some little way both above and below its opening into the theca. There was no increase of vascularity, excepting where the theca was also diseased.

Having met with these lesions in some cases where the animal had never evinced any symptoms indicating the existence of disease in the part affected, I am inclined to believe that their formation is unattended by any thing approaching to inflammation. Nevertheless, I doubt not that they are extremely susceptible of being seriously affected by any inflammatory action which may be set up in the theca, whether by accident, over-exertion, or any other cause. I can readily conceive the possibility of some of the little tendinous shreds escaping from the cavity in the tendon into that of the synovial theca, and there, acting as a foreign body, causing inflammation, even of the most intense character. This, however, is merely hypothesis.

I recollect dissecting the fore extremity of an old carriage horse,

that, for about eighteen months previous to his death, had been subject to intermittent lameness. Whenever he had a little quick work, he was invariably a cripple for some days afterwards. The increased heat and sensibility of the parts posterior and a little above the fetlock, indicated that the seat of lameness was in the theca. His dying of an acute attack of pleuro-pneumonitis gave me an opportunity of examining the limb. In the theca formed by the flexor perforatus I found several little tendinous shreds or fibres, which evidently owed their origin to the formation of a very extensive cavity that existed in the body of the tendo perforans. Some were floating about in the synovia, which was much altered in quality, being considerably darker than usual, and streaked with blood; while others were adherent to some false membranes that had been formed.

Along with some synovia, and a great number of tendinous shreds, the excavation in the tendon contained a quantity of lymph. The surface of the tendon itself was very vascular; in fact, both the tendon and the theca containing it shewed the most evident traces of often-repeated and long-continued inflammatory action. The carpal portion of the same tendon also had a cavity formed in it; but there were no signs of either it, or the theca in which it was placed, having at any time suffered from inflammation.

It becomes a question,—Which was the first affected, the tendo perforans or the theca of the perforatus? Taking into consideration that the carpal portion of the tendon was also diseased, I should say, the tendo perforans.

Although the shreds may not have been the immediate cause of the inflamed state of the theca, yet the inflammation being once set up, their presence must have led to its continuance.

Although some may consider this lesion, from the comparative rarity of its occurrence, as a matter of very little importance, yet, as a pathological fact, it deserves to be placed among the records of our art. Contributions, however trivial, to that too long neglected branch of science, pathological anatomy, cannot be otherwise than interesting.

ON PRESSURE AS A CAUSE OF ROARING.

PRESSURE ON THE RECURRENT BRANCH OF THE NERVOUS VAGUS, RESULTING FROM AN ENLARGEMENT OF ONE OF THE LYMPHATIC GANGLIONS, CONSIDERED AS A CAUSE OF ROARING.

By the same.

The following is extracted from an unfinished memoir on paralysis and atrophy of the laryngeal muscles, originally intended for the "*Recueil de Médécine Véterinaire.*"

"The causes of this disease may be divided into nervous and mechanical. The first may arise either from pressure on the par vagum nerve, or on its recurrent branch; from total or partial division of either whether by experiment or by accident; or from the destruction of their tissue by participating in the disease of some contiguous part.

"When the atrophy is caused by an interruption of nervous influence arising from pressure on the nerves we not unfrequently find that one or more of the lymphatic ganglions is enlarged, and that the nerve is involved in the tumour resulting from the effusion, and subsequent organization, of lymph which has taken place in the cellular tissue enveloping the ganglion. The following case appears to be one of this description:—

"In the month of May, 1837, I was consulted respecting a grey horse, aged nine years. Twelve months before, I had successfully treated him for farcy. He was now sent on account of a general decline of health. He was much emaciated, sweated on the least exertion, and did not eat more than half his rations. Independently of this, he was a most inveterate roarer. The owner told me that it was then seven months since he shewed the first symptoms of roaring.

"I attended this horse until the end of June, but without the least success. He still continued in the same miserable-looking state. His owner, impatient at the slow progress of the malady, and being tired of keeping an animal which, from its great debility, was perfectly useless, ordered him to be destroyed. This was done by the effusion of blood, and the autopsy was made with all possible care.

"On examining the contents of the abdominal cavity, almost all the lacteal glands were found considerably enlarged, and one of them to such an extent that it formed a tumour weighing between six and seven pounds. One of the lymphatic ganglions environing the pelvic region was also of an enormous size.

"On exposing the trachea, for the purpose of examining some very minute threads given off by the recurrent nerves in their passage up the neck, I perceived that one of the lymphatic ganglions, situated at the lower part of the trachea, about four or five inches from its entrance into the thorax, was much enlarged, and of a degree of hardness approaching to that of cartilage. The cellular membrane surrounding it had become indurated, and tended to increase the size of the tumour. The recurrent nerve of the same side was involved in this mass, which presented exactly the same appearance as the scirrhous glands which are frequently found in the deep-seated regions of human subjects who have fallen victims to scrofulous disease.

"That part of the recurrent nerve situated between the tumefied gland and the larynx did not at all resemble its fellow on the opposite side. It was much shrunken, and its nervous fibrillæ could scarcely be detected. All the laryngeal muscles which were supplied with filaments from this nerve were so completely atrophied that it was with difficulty they could be recognized as muscular structure, even in its most degenerate state. The glottal opening was greatly distorted, the border of the right arytenoïd cartilage being partially drawn over it. It appears very evident, that, in this case, the cause of the atrophy is clearly demonstrated by the fact of the recurrent nerve having been compressed by the scrofulous (perhaps I am wrong in using this term) gland, and thus being destroyed as a conductor of nervous influence to the muscles of the larynx. It is well known that when the motor nerves going to a muscle cease, from being either diseased or divided, to transmit to it that stimulus which is necessary for its contraction, atrophy is the inevitable consequence.

"I should not be positive in my opinion relative to the compression of the nerve by the enlarged lymphatic gland being, in the present instance, the cause of the structural alteration of the laryngeal muscles, were I not enabled to produce similar effects by the simple division of the same nerve. I have many times divided the recurrents in the horse, the ass, the dog, and other animals, and have invariably observed the same effects, although frequently modified in degree. In the horse, ass, and mule, it causes roaring; in the dog and cat, a peculiar alteration of voice. The alteration in the voices of the different animals experimented upon is caused by a paralysis of the dilating muscles of the larynx, resulting from the interception of the nervous communication between them and the medulla oblongata by the division of the grand conductor, the nerve itself.

"If, instead of dividing one recurrent only, we divide both,

there are phenomena produced which differ much in the different species of animal on which we operate. For example:—in the dog we have a loss of voice—in the ass it is only partial—while in the horse death itself is produced by asphyxia. This animal sometimes dies in the short space of three minutes after the operation, and sometimes not before the expiration of as many hours. If, after having divided one recurrent nerve of a horse, we allow some months to pass before we destroy him, we shall find that all the laryngeal dilators of the side on which we experiment will be so atrophied as to be scarcely recognizable."

A SINGULAR TUMOUR IN THE REGION OF THE PAROTID GLAND.

By Mr. S. W. Jeffery, *Blandford.*

April 9th, 1838, I was called upon to attend a cart-horse, four years old, the property of Mr. S. Burtt, of Gussage, having an abscess on the side of and connected with the parotid gland on the off-side. I found it to be of immense size, and ready to burst. I lanced it, and more than a pint of pus escaped; after which I was obliged to remove a large portion of morbid integument. I ordered him some corn, and soon perceived the saliva oozing from the abscess, which led me to infer that the sloughing had extended to and had opened the parotid duct. From the immense size of the abscess, and the state of the parts, I thought there was but slight chance of recovery; in fact, I wished the owner to have the horse destroyed: however, we thought that we would give the animal a chance, and I dressed the wound with a pledget of tow soaked in digestive liniment, composed of equal parts of oil of turpentine, and linseed oil.

10*th.*—Pulse forty. The abscess looked somewhat cleaner, but the saliva had soaked through the linen cloth that had been put over the dressing. I cleansed the wound with tow, and applied the red-hot iron to the outlets from the parotid gland, from which, on giving the horse a little corn, I could now see the saliva escaping. I then dressed it with a lotion, composed of one part of nitric acid and twelve of water.

11*th.*—I again used the iron, and dressed the wound as before.

13*th.*—The iron was no longer required, but the digestive liniment was continued. After this the wound was regularly dressed by the smith with the lotion and liniment alternately; I merely calling occasionally.

On the 8*th* of May I made my last visit, for the abscess was healed; and, in the course of a fortnight, a small mark only was visible.

I am inclined to believe that this was a case of strangles, the tumour and abscess forming in the cellular substance connected with the parotid gland, instead of that between the branches of the lower jaw. Mr. Burtt had two horses just recovered from strangles, when the tumour began to appear in this horse.

ENTERITIS, WITH ASCITES OF THE ABDOMEN.

By Mr Harry Daws, *London.*

A brown gelding, eight years old, belonging to Messrs. Wimbush, was attacked with enteritis in a very acute form on the 23d January 1836. He was treated by copious depletion, enemata, aperient and anodyne medicines, &c., as the symptoms required. He remained very uneasy for two days, his pulse being upwards of 130 beats in a minute, and his bowels had not acted during the whole time. As much as ten drachms of aloes had been given without producing any evacuation. The bowels, however, at last became relaxed, and it was feared that death would ensue from superpurgation; but by the timely administration of astringents the case terminated in resolution, and the animal soon recovered his wonted health.

On the 6th of March following I was again requested to attend the same patient. I found him labouring under an attack of gastritis: all remedial measures proved ineffectual, for he died in a few hours after the commencement of the attack.

Upon an inspection of the carcass the following were the appearances:—

About ten gallons of turbid serum were effused in the cavity of the abdomen. The large intestines were very much collapsed, and adherent to the peritoneum near the curvature of the colon: the small intestines were also adherent to each other in several places. The stomach was highly inflamed, and a rupture of the villous portion had taken place (this I suspected in consequence of his vomiting before death), so that a considerable quantity of ingesta had escaped and insinuated itself between the folds of the omentum. The intestines generally were very much thickened, and exhibited marks of previous inflammation having been carried on to a very great extent.

REMOVAL OF A VERY LARGE SCIRRHOUS TUMOUR FROM THE SCROTUM.

By Mr. J. A. Ainslie, *London.*

Sept. 5, 1838.—A bay horse, the property of Mr. J. Bardell, and bought for experiment, was cast, and a tumour removed from the scrotum, weighing seven pounds three-quarters. The vessels were extremely large. Ligatures were used, and the loss of blood not so great as might have been expected. The edges of the wound were brought together and the horse released. The removal of the tumour occupied fifteen minutes, and the horse was in the hobbles only thirty-two minutes. The animal was very faint, and lay for half an hour before he attempted to rise; stimulants were given to him, and he recovered sufficiently to stand, but could not walk without support on each side.

At five o'clock there was a small stream of venous blood from the sheath, and the horse became very faint and restless, continually lying down and rolling. The wound was then filled with tow, and he was shut up in the box.

About twelve o'clock the bleeding again returned, and he was very uneasy. The pulse was extremely irritable, and weak. The wound was then plugged with tow, as tight as the stitches would allow.

At three o'clock on the next morning he became quiet, and began eating. I then went to bed, and the man who remained with him said he was quiet, but that the blood continued to trickle, and, at times, to rush out in a stream. The pulse was irregular, and scarcely to be felt, but very quick all the morning. He had a mild laxative, and continued to eat a little hay and drink some gruel.

About four p.m. the hemorrhage returned, and he lost about two quarts of blood from the wound. The bleeding was arrested, and he did not appear to suffer from it. In the evening he was back-raked, and enemata thrown up, for he had passed neither dung nor urine.

7th.—He was observed to stale without the appearance of much pain; and in the course of the day his dung was pultaceous: the pulse was full, but very irritable. He fed well, and all seemed right. At the posterior part of the wound matter had formed; but in the afternoon he began to bleed again from the anterior part of the wound. He lost about two quarts, and the bleeding was again arrested.

8th.—Matter forming; the stitches giving way, and all appearing right.

The parts were kept clean, and to-day, the 19th, he was ordered for work. The wound was very small, and the horse was otherwise quite well.

The history of the disease I will endeavour to furnish you with at a future period.

A VALUABLE ADDITION TO OUR STABLE ECONOMY.

Communicated by Mr. Harry Daws.

Within the last few days a patent has been obtained by Mr. Frederick Stacey (late head groom to the Earl of Derby) for material improvements in the construction of racks and mangers, and also for inventing and manufacturing an important and useful article, adapted particularly for the veterinary surgeon, as well as the horse proprietor in general, viz. an elastic water-bath, or pan for horses' feet.

The principal features in his improved construction of racks and mangers are, the impossibility of the horse wasting any food; the increased comfort when feeding, arising from the peculiar construction of the mangers—the ease with which the rack and manger may be entirely removed, so as to present one level, plain surface in front of the horse; a most excellent remedy for crib-biting, and useful in cases of phrenitis, or any disease in which the horse falls or rolls about.

The elastic water-bath, or foot-pan, is deserving of a greater encomium than I can pass upon it. It is so constructed that it is either portable, or can be fixed in any stall or situation. If let into the ground, level with the floor, nothing more is necessary than a plank to cover it, and the stall can be used for ordinary purposes. For lamenesses in the feet, requiring cold and moisture, I should say that it is unrivalled, and should be found in every veterinary surgeon's establishment.

These inventions have received the patronage of many noblemen and gentlemen, and several veterinary surgeons have expressed their approval of them, and their intention to use them.

An inspection of the models would be more instructive and satisfactory than the reading of this account; therefore I would advise any one who feels interested to go and see them. They are now on view at Mr. Legrays, coachmaker, Weymouth Mews, Portland Place, every day from ten till four.

[I have had the opportunity of inspecting these stable improvements, and have no hesitation in saying that they are most valuable.—Y.]

ON SPECIFIC FEVER OF HORSES, OXEN, &c.

PRACTICAL OBSERVATIONS ON THE SPECIFIC FEVER FROM THE CONGREGATION OF ANIMALS, MADE DURING SEVERAL YEARS, AT THE EAST INDIA COMPANY'S EXTENSIVE BREEDING ESTABLISHMENTS FOR HORSES, OXEN, AND DROMEDARIES, IN INDIA.

By Mr. J. T. Hodgson, *Hampton Wick.*

There is a constitutional predisposition, from newness of texture or organization, in all young animals to be attacked by fever from being congregated in great numbers; but while they are kept at the place at which they were bred, although exposed to the exciting causes, they are not so predisposed as when removed thence, or else more readily acted upon afterwards by the usual exciting causes.

Young animals are attacked by this fever at all ages, but when kept in small numbers, arrive at maturity without it. On being afterwards congregated with others, they are rarely exempt from its attack.

This fever is observed in India as a primary affection; that is, there is an alteration in the natural action of the heart and arteries, without the slightest symptom of local disease.

Whatever the local disease which is the consequence of this fever may be, whether strangles, catarrh, farcy, glanders, tuberculous ulcers in the lungs, or affection of the liver or skin, the pus inserted into a healthy animal produces a similar fever on the third day, and symptoms of local disease on the fifth day.

There seems to be a disposition for the same part to be affected in the inoculated animals as in those from whom the pus was taken, dependent, however, in some measure, on the part. The latter circumstance has been remarked by Mr. Coleman, with respect to inoculation with the pus of farcy and glanders, as a test of these local affections being the result of one and the same constitutional disease. Inoculation, therefore, so far as producing always the same local affection, is by no means a test that these different local affections are distinct diseases; while the remarkable coincidence of the fever being observable on the third, and the local affection on the fifth day, whatever part becomes diseased, is a proof that all are the results of the same constitutional disease.

The contagious nature of the pus of strangles was well known at the Company's stud. Lieutenant Johnson, as I was told, inoculated some colts in the extremities with the matter of

strangles. His object was to produce the mildest result of this peculiar fever; for the losses had been very serious when the disease appeared in one of its severer forms. Mr. Assistant Superintendent Gibb, who had been at the Veterinary College, seeing that farcy, and not strangles, was the result of this inoculation, forbad all further experiments. This was previous to Mr. Sewell's inoculation with the pus from tuberculous ulcers in the lungs.

I determined, however, again to experiment with the pus of strangles, and I inoculated a yearling with it in the under lip, and produced the fever and strangles at the usual periods. I have often produced similar results by the same means from other colts.

I had previously tried inoculation from a fresh tubercular ulcer of the skin (bursauttee); and although I failed in producing a secondary bursauttee ulcer, I observed that I had deranged the circulatory system and produced fever.

In regard to the transmission of disease from one kind of animal to another, I have over and over again produced disturbance in the system by inoculating different kinds of animals with pus from local affections in others. You are not, however, always to expect a precisely similar local affection, on account of some peculiar idiosyncrasy, or difference in predisposition. I have produced pustules similar to small-pox in dogs by inoculation with the matter of glanders.

Man, whether congregated in uncivilized or civilized life, is predisposed to similar specific fever in youth, and also to similar results, small-pox, tubercular phthisis, and scrofula. He also has the advantage of similar preventives of the severer forms of disease by the milder specific fever, and also by local affections produced by inoculation, as the immunity from variola which the vaccine lymph effects.

The local affection in these cases seems to result from the debility of the part: thus, in India, where a horse will perspire freely in the shade at the period of the year when the bursauttee ulcer is prevalent, it induces debility in the vessels of the skin, which predisposes to this local affection as the result of the fever; and as this does not happen in other countries, it is remarkable as shewing the cause of these things.

The symptomatic difference is obviously enough produced by difference in the predisposing and exciting causes. Animals congregated as in India in the open air, or at grass or straw-yard in Europe, do not escape this attack of fever. Yearlings, or older colts, during their easy journies from the breeder to the stud, would have the fever, and sometimes strangles or catarrh;

and I never knew a colt pass over the first hot or rainy season without them.

Colts are purchased at all seasons of the year. The variation of temperature in the cold season—the heat of the day, sixty or seventy degrees, and of the night, thirty-two degrees, and in the hot season the thermometer being from eighty to ninety degrees in the shade, and from one hundred and twenty to one hundred and forty degrees in the sun—these things only varied the local affection, as they induced in particular organs that debility which predisposed to disease. Congregation then became the exciting cause.

In India, during the rainy season, there is not, sometimes, a current of air sufficient to convey off the deteriorated atmosphere which is produced by congregation in the open air, and fever is excited in so short a period that even the daily journies of several miles are not sufficient to prevent it,—although change of place is the only effectual method of accomplishing it.

Cavalry horses in India are not constantly stabled, and, in some parts, stables are unknown except as places that may have been spoken or heard of in some distant part of the country. Stable-fever, therefore, is not a term that we can use: besides, the fever is still the same, although the local affection is different in the open air and in dirty stables. Even in clean stables in India the fever cannot be prevented when the animal will be attacked by it even in the open air.

Colts that have had this specific fever once are not liable to it a second time. Colts and horses are afterwards exposed to the exciting causes by being congregated in great numbers, without being affected by any local disease. It is, therefore, advantageous to do away with the predisposition by inoculating colts in the lower lip as early as convenient with the pus of strangles. Serious losses occur at a later period, when colts are about being brought into work, from their not having previously had this fever.

I had twenty Arabians, of different ages, in training one season, 1829-30, and I have seen more or less numbers in the stables of others, as well as colts from thorough-bred English stock, bred by Messrs. Stevenson, Gwatkins, Majoribanks, Gage, and others. I never saw or heard of an *Arab* having what trainers call distemper, notwithstanding the changes to which these animals are subjected, from the Persian Gulf to different parts of India. The colts from private breeders, however, were subject to it; and to those only who have been connected with the turf, and had colts engaged in produce stakes, can the disappointment be known; and which might have been avoided by earlier doing away with the predisposition, by inoculation with strangles.

I have prevented the local affection by dissolving one part of the chloride of soda in twenty-four parts of water at the temperature of fresh drawn blood, and gradually and carefully injecting it into the jugular vein. If the operation is properly performed, the animal experiences no inconvenience, and the fever, whether produced by inoculation or arising spontaneously, subsides. As, however, to the secondary affection—the glanders, tuberculated lungs, farcy, &c. I dare not hold out hope that this treatment will be productive of any good effect. They who like may try it, where the constitution is not broken up by disease.

I do not agree with Mr. Sewell, that the lungs are the seat and origin of glanders—See a sketch of Mr. Sewell's introductory lecture in THE VETERINARIAN for 1827; but it is my opinion that the blood is most concerned in the affair, as proved by the transfusion of blood from the diseased to the healthy animal by Mr. Coleman. The lungs are the medium only through which the blood becomes diseased, whether producing fever primarily, or rendering a local disease specific, as common catarrh, becoming at times contagious, or accidental wounds being followed by farcy or glanders.

In my time, from 1816 to 1821, the home stud at Hissar, in Hurrianah, on the border of the desert, consisted of fifty mares and their produce. The latter were attacked by this fever from three months to four years old, the local malady being generally diseased lungs, and the younger the colt the more severe the malady. The stock was kept in two ranges of loose boxes opening inwards, the intermediate space being straw-yards, in which, or the paddocks, they were always at liberty in the open air, except when housed on account of the extreme heat during the hot winds, on the frosty nights in the cold season, or the torrents of periodical rain. They were all well fed and clothed.

This stud was afterwards increased to one hundred mares, sixty or seventy of which annually produced young ones. Colts were also purchased from native breeders, and these were more predisposed to be attacked by this fever, and the results of it, strangles, catarrh, and diseased lungs, than the home produce; so were horses in that part of the country, particularly along the Cugger river, where the natives call it the Faitah, and since the old canal was opened along it also. Here, then, the influence of moisture had much to do with the production of this fever, but it could have no influence on the stud, as the river is distant several miles. The canal runs close by it, but that is since my time. I have crossed this desert from Butneer to Bahawalpoor, and moisture could have no influence whatever here.

Dealers' four-year-old colts were sometimes congregated at Hissar in considerable numbers, to be offered for the remounting of the cavalry. They were standing in the open air in thick clothing, and were liable to catarrh, particularly after rain; but I cannot say that it was the result of this fever. Some had strangles,—that was connected with this specific fever; but in this case the stabling had nothing to do with its production; there was, however, sufficient cause in the accumulation of dung, urine, and filth of all kinds around, rendering the atmosphere impure.

The stud at Haupper (Delhi), where I was four years, is situated on high ground, nearly surrounded by water, liable to the marsh effluvia rising and passing over it, when this mountain stream overflowed during the rains. It consisted of about 1200 colts, nearly 400 being purchased annually, and the like number passed into the service. Whether yearlings or older colts, if they did not arrive with fever, strangles, or catarrh, they would have it shortly after, or, at all events, before the hot or rainy season was over, whatever was the management, or however it was varied with a view to prevention.

Before I joined, in 1829, Mr. V. S. Purves and myself condemned colts for glanders and farcy; but, subsequently, by diminishing the number of colts in the stables, and by improved ventilation, glanders and farcy ceased to be prevalent, but strangles and catarrh were as much so as before. These latter are not the same mild diseases as in Europe, for abscesses occur in glands beside the submaxillary ones. Catarrh is also sometimes attended with ulceration of the mucous membrane of the nose; and although this ulceration healed, and the discharge of pus ceased, yet, as specific fever was produced by inoculation with the limpid secretion from the nose, I had such colts destroyed, as already stated, on account of the danger of infection from a severe form of disease.

The specific fever in this climate is always severe. It is observable as a *primary* affection. Few cases of mild strangles happen, and death from diseased lungs is the frequent result. The consequent debility is, in all cases, *very great;* and colts are a considerable time after their recovery before they get into condition again. After this, however, they do well until passed into the service; and although some have had several hundred miles to go in order to join their corps, exposed to the variations of the climate—going from stables to stand in the open air, and again from the open air into stables, I have never heard of those colts being subsequently attacked by catarrh.

I did duty with the 3d brigade of Horse Artillery at Meerat

three years, and with the Body Guard in Calcutta two years, 950 miles distant from each other, in the arid plains of the Doob, and the marsh of Bengal—widely different climates—and had such been the case it would not have escaped my observation, although I did not, at this time, consider that, having had this fever once, colts were not afterwards predisposed to it. Besides, glanders and farcy were prevalent during the whole time that I was with the Body Guard. I was then in the habit of considering these diseases as altogether distinct from strangles and catarrh, and I did not note whether the horses were stud-bred or not; but subsequent experience convinced me that in this climate they are all the result of this formidable specific fever, and that the only effectual preventive is inoculation with the mildest local disease—strangles; and thus doing away with the predisposition to the severer forms of it, whether catarrh, farcy, glanders, tuberculous skin, or diseased lungs.

In my time there were at Hissar 2841 old and young camels in 1819-20, and 3706 in 1820-21. They were always in the open air, and, although separated for the convenience of feeding, and the locality of the herd being continually changed, yet such was the powerful effect of the effluvia from their dung and their urine, that this specific fever was induced, followed by catarrh and diseased lungs. The natives of Western India call it the *Pakdar*. They consider it to be infectious, and carefully separate the diseased from the sound. The appearances on dissection were similar to the morbid affections of other animals that died in consequence of this fever.

These animals were kept in the arid province of Ajmeer, where the periodical rains are not severe at any time, and where drought oftener prevails; yet the stagnation of the atmosphere during the rainy season is exceedingly oppressive to all animals, producing that debility which so frequently precedes or prepares for the accession of fever.

Sheep are kept in larger flocks in the provinces of Ajmeer and Bicanere than in any other part of India, and always in the open air; yet they are very much predisposed to this fever in these provinces, and in the latter especially, where water is so scarce that the little rain that falls is preserved in tanks. Sheep purchased for me in Bicanere have been infected with the rot; and how could that be accounted for but as a consequence of this fever?

The nights in this desert are always cold, and the days hot, even during the cold season, predisposing the air-passages to be affected by inflammation; but there could be no marsh effluvia here satisfactorily to account for the rot, according to the gene-

rally received opinion of its cause. Even where this cause is present in other parts of the country, where sheep are kept in smaller numbers in different villages, and housed, the rot appeared to me a breaking up of the constitution from secondary disease—the consequence of this specific fever. Animals with incipient tubercles in the lungs and liver are fattened; but this plethoric state excites an inflammatory action in the tubercles, which ends in suppuration, or the death of the animal from symptomatic fever, or diarrhœa, &c.

I do not agree with Mr. Sewell, that animals with organic disease from this specific fever are ever curable, because disorganization has already began. My experience of young animals congregated in large establishments has led me to very different conclusions. I could excite inflammatory action whenever I chose by sending a colt that had the lungs affected back to the stables; and the same by sheep, by turning them in among the flock. This inflammatory action may be renewed again and again, and, perhaps, once too often.

While I kept my rams isolated they did well; but those that were turned into my flock of 200 ewes invariably died. I lost most of the lambs one year by this fever, and in some measure, but not entirely, prevented in the next year by separation.

The stock in the cow farm at Hissar varied from 2682 to 1142 neat cattle. They did not appear to me to be very susceptible of the attack of this specific fever. It might, however, break out in one herd, and yet there not be a single death in the next one, although so great a number of young and old animals were congregated together in large open spaces, entirely surrounded by brick walls, and the sheds opening inwards.

The cows were not milked, for the young ones had the whole of the milk. This peculiar care of the calves doubtless rendered them less predisposed to disease, and by giving the stock a small quantity of hay in the hot weather, when the grass was short, and keeping them in during the rains, for a week or ten days, in order to prevent the feeding on too much green grass, the golee or inflammatory fever was prevented in this large farm, while the want of these precautions caused loss in the smaller herds in the surrounding villages.

There is another reason why specific fever is not so prevalent among neat cattle. The cow-dung being used by the natives for fuel, is frequently removed to be dried; whereas in the sheep-folds and sheds it remains untouched, and a powerful source of infection.

The Calcutta Hunt Club hounds have always suffered severely by this fever, whether produced by the congregating of the fox-

hounds on ship-board, or afterwards in the kennel. The gentlemen who, from time to time, had the management, were *sportsmen*, and took the greatest individual interest in it. No expense has ever been spared. The kennels have been constructed and reconstructed, and the locality more than once changed.

The kennels were originally on the English plan, and afterwards of very open bamboo lattice-work. Experience, however, has convinced me, that the kennel should have been removable as the ground became contaminated, or the hounds have been kept separate by the members at their different houses. This, however, would have been considered *infra dig.*, as the style of modern fox-hunting is the object. Condition, too, could not have been so well attained. Although carried to cover in vans (somewhat too small), and the work only from daybreak until just after the sun becomes powerful, the fatigue is excessive, as hunting is continued throughout the hot season, until the rains *plant* the horses. Debility, however, is not to be overcome even by the high blood and courage of the British fox-hound.

I hunted with these hounds for two seasons, and occasionally attended the sick dogs. I therefore had every opportunity of becoming perfectly aware of the curative effects of the treatment adopted; and I must candidly say, that it was very unsatisfactory. When once a dog has had this fever, if there remains the slightest affection of the lungs or liver, although the animal may recover flesh, condition is seldom attainable, as the very means necessary for this become an exciting cause of secondary symptoms of disease of these organs.

So convinced were the members of the hunt of this, that the hounds were sold to go to the upper provinces, where, from the circumstance of difference of climate, and being kept in smaller numbers, the exciting causes were not so great, and the dogs lived for a time, but to be carried off ultimately as certainly as ever Mr. Bakewell's rotten ewes were.

I have seen gentlemen give 300 rupees each, for greyhounds to breed from. While the dogs were allowed to run about the house or tent as they pleased, they did well; but when their numbers were increased, and the old ones had whelps and were kennelled, they were all carried off by this fever. These dogs most likely imbibed the fever from congregation on board of ship; the secondary symptoms carried the old ones off—the primary fever, or its immediate results, destroyed the young ones.

There is very considerable analogy between the origin of this fever on board of ship in these dogs, and the case of the sheep already mentioned in the Bicanere desert. There is on board of

ship an absence of nearly all that might be supposed the exciting causes of this fever on land, excepting the congregation of the animals, for the strictest cleanliness is imperatively enforced, and yet this malignant fever rages. The loss from the congregation of too many Arabian horses on board the ships from the Persian Gulph to Calcutta is sometimes very great. If the animals are not evidently affected previously to their being landed, their purchasers have afterwards too frequent cause to repent the mischief that has been done.

The cheapness of poultry in India has induced many a captain to overstock his vessel on her homeward passage; and the consequence of the coops being thus crammed is, that the stomachs of the passengers are not to be long supplied with this kind of food, for the fever breaks out, and very soon diminishes the number of the birds.

I have kept and have seen others keep numerous tame rabbits; but, now and then, the fever would break out among them and carry off every one. It has been the same with poultry, wild ducks, and quails. The success in rearing and fattening all animals in India, seems to depend on a small number alone being kept at any given time.

I was not in the Himalaya mountains long enough to make any very accurate examination; but from the animals being housed from the cold and periodical rains, and from what I saw of the humidity of the climate even in the hot weather, and four thousand feet above the plains—from sheep purchased for me in Thibet dying on the road over these mountains, and some that arrived having the rot and dying from the result of this fever—from what I have heard about the Company's merinos, kept at this altitude, or, in the cold season, in the hot and dry valleys below, and from what I have heard others say who have resided in Himala several years, I am convinced that this specific fever is very prevalent among all kinds of animals here. Living in the clouds, therefore, does not prevent it: but, wherever animals are congregated together, we should be able to command a regular trade-wind, to renew the atmosphere. As we cannot do this, we should endeavour so to season the different domesticated animals, as to render them proof against the effects of this malignant fever.

I mention these facts to shew that this specific fever will occur under all circumstances, simply from congregation—that the result of this fever in all animals, though passing under different terms, and considered as distinct diseases, not only in the different genera of animals, but in the same genus, are, nevertheless, only modified local affections from difference in the pre-

disposing and exciting causes—that they are malignant in all animals, arising spontaneously from adventitious circumstances—though not infectious in all animals, yet in all animals contagious, and in some cases not confined to one genus, but easily transferred to another, as the vaccine disease, in which there is the curious coincidence of the fever observable on the third day and the local disease on the fifth day. I have also proved that lymph from animals labouring under this specific fever is capable of producing it by inoculation as pus is.

Whether in civilized or uncivilized life, all animals must be occasionally congregated in greater or less numbers. We are well enough acquainted with the predisposing and exciting causes. Do we avoid these? No! We try to prevent sometimes. Do we succeed? No! Read the descriptions of influenza—we have now one type, and then another, and again another. The truth is, *we have had one and the same specific disease all along.* The large horse proprietor, who has had in his stables what he terms "mild influenza," will generally find, to his cost, the secondary effects of it in some of his horses. The shepherd who observes a trifling catarrh in his flock, has had this fever among his sheep a few days previously, and the secondary symptoms will ultimately carry off more of them than he likes.

I would rather give my lambs the fever by inoculation from a sheep with catarrh than have it happen to my flock spontaneously, and carry off probably the whole of them by the rot. I would do the same with young animals of all kinds; that is, I would at once get rid of the predisposition to this fever. It is no matter to me whatever diseases it may be supposed to be predisposed to afterwards. I should get rid of the *most malignant* and *insidious* in its results that animals can be affected with. "*Consumption curable*" may do very well for an advertisement; but the case is worth little when the symptoms are constantly liable to return.

The predisposition here meant to be done away with by inoculation is that of *newness of texture*—to render the horse, neat cattle, sheep, dogs, &c. seasoned animals at an earlier period, and without loss, than is now done by different management at a later period and with serious loss: for, notwithstanding all that has been written regarding prevention, how little is it attended to! The London horse proprietor, whose old stables might be said to be in a cellar, builds for himself a new establishment; but his stables are in the cellar still. A troop of cavalry horses in India are under one roof; and at the Stud, the wiseacres who planned and built the stables intended two hundred and fifty colts to stand (one hundred and twenty-five on either side a

wall, having a few windows only in it) under one roof, and this, too, in a country in which the animals do not escape the specific fever in the open air.

But into how many stables are young horses introduced where no means of prevention are ever thought of! Cattle and sheep are congregated at fairs, and go back to their owners or are transferred to others with this fever sometimes upon them. The laws in Germany, regarding the soundness of animals at the time of transfer, have reference to this, and there are stated periods when animals may be returned. We know if a colt is attacked with diseased lungs, as a result to this fever, six days after the purchase *he was sound at the time of sale;* if before five days, *he was unsound,* that is, he had the fever on him at the time of sale. In both of those cases, in our courts of law who would be the sufferer? The unfortunate dealer. It would be the same with strangles, catarrh, farcy, and glanders.

THE VETERINARIAN, OCTOBER 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

THE FRENCH AND ENGLISH VETERINARY PRESS.

The conductors of the French Veterinary Press have lately begun to follow the example which we long ago set them, of extracting certain articles from our monthly periodical. We thank them for it. When we commenced this course, we were certainly actuated by self-interest, but quite as much by a deep feeling of what our common art owed to the labours of our Continental brethren. We enriched our own Journal, and we bore an honest testimony to the worth of that of our neighbours.

The editors of the "*Recueil*" have, during the present year, translated the papers of Mr. Black on "Paracentesis Thoracis," and of Mr. Mayer on "The past and present State of Veterinary Science in England." They have paid a well-merited compliment to our *confrères,* and they have shewn their own judgment in the selection.

They have also thought proper to give, and at very considerable length, the Lectures delivered by Mr. Youatt on the subject

of Glanders. He, too, acknowledges the honour they have done him, and the perfect accuracy with which his opinions have been stated.

M. Bernard, the editor of the *Journal des Vétérinaires du Midi*, has gone farther. He has certainly given a much more abridged account of these lectures; but he has appended some remarks of his own, and characterized by so much candour as well as good sense, that the editor of THE VETERINARIAN begs to give, with one or two exceptions, an almost literal translation of them, and without one critical remark. The cause is before the proper tribunal, and to its decision all parties must bow.

May this intercourse, honourable to all concerned, long continue! The time will not then be far distant when we may say of our noble art what Lamartine says of genius, that it

> Par les nuages de l'envie
> Marche long-tems environné:
> Mais au terme da la carriere
> Des flots de l'indigne poussière
> Il sort vainqueur et couronné."

M. Bernard had been enumerating the various causes of glanders as stated by Mr. Youatt, and he thus continues:—"There are two which seem to me to deserve the greatest attention. The first is hereditary predisposition. "This doctrine," says he, "that there is scarcely a disease which does not run in the stock, is gaining new advocates every day." In proof of this Mr. Y. cites the fact reported by M. Dupuy, of a mare that died glandered, and in whose progeny, through the two next generations, the disease occurred without any known communication or cause: and when he coupled this with the fact that the county of Tipperary was over-run by the blind progeny of Chanticleer, himself blind, and that it took many a year to eradicate the roaring with which Major Wilson's horse had infected the breed of horses in another part of the country, he occupied a ground from which he cannot be dislodged. We may add to this the introduction of melanosis, brought from Normandy by a grey stallion into the department of l'Ain, where it was previously unknown.

"Another and most frequent cause of glanders is contagion.

Of this opinion Mr. Y. is one of the warmest partisans. He goes so far as to say, that glanders is produced more frequently by this cause than by any other. In his opinion this disease may exist for an indefinite period, without any other indication of that existence than a somewhat increased discharge from one or both nostrils, and that at first small in quantity, and *not adhesive*.

"It would be useless to cite the facts related by Mr. Y. They are of the same kind with those by which, for many a century, it has been sufficiently proved that glanders is contagious. The belief of this contagiousness of glanders is common to all the English veterinarians. Any difference of opinion among them has reference only to the degree and the mode of contagion.

"According to our English author, glanders cannot be communicated by any contact of the virus with the pituitary membrane, unless that membrane is excoriated; but it is most frequently effected by means of the virus left on the manger or the walls, or swallowed with the solid or liquid food, there being some wound or erosion of the mucous membrane.

"Mr. Y. doubts whether a glandered horse was ever really cured by any medical treatment, nevertheless he thinks that the case should not be quite abandoned. As glanders is a malady peculiar to the stabled horse, he is of opinion that the first and indispensable condition of treatment is the breathing of a pure atmosphere, such especially as is found in the open pasture. No local applications will afford the slightest hope of cure, unless vesicatories or setons on the bones of the nose or along the sutures; but, in the great majority of cases, the seat of this local inflammation may not be within the reach of these stimuli.

"Among the tonic medicines which may possess some power, he recommends the sulphate of copper or of iron, dissolved in small quantities in the drink of the animal.

"Such is the opinion of our neighbours on the other side of the water respecting this fearful disease—so different from that of the French veterinarians. Then, in the presence of such a schism, based on such a number of contradictory facts, recorded by observers equally competent and careful, and by authorities equally unimpeachable, who of us does not feel his confidence

in his former theories a little shaken? For myself, I acknowledge that I have never been able to form a decided judgment on this affair. I have always asked myself, if there did not result from these contrary facts and opinions two different considerations, with regard to which we reasoned as if there was but one question only to be determined? Whether under the term glanders, different diseases were not included, some of which were contagious, and others not so; or whether the same malady could not occasionally wear these two characters, according to certain conditions and circumstances which we are unable to explain?

"The question will never be satisfactorily determined, until we have agreed, and with the utmost precision, on the characters of true glanders.

"I am assured by all parties, that acute mange is highly contagious. I will not deny it; yet I will state some facts which are inconsistent with that opinion.

"In 1832 a young horse was sent to us by M. Vallex, veterinary surgeon, who could not keep him in his own stable because he had acute glanders and farcy, and to such a degree that he died in three days. He was placed in the same stable with the horses destined to undergo various operations. Next to him stood a grey horse, into whose nostrils I caused to be introduced a large pledget of tow, saturated with the red ichorous matter which escaped from the nose of his neighbour. After some days, the pledget was withdrawn, and in the situation which it occupied I observed a black ulceration, similar to those which had existed in the other horse—every other part of the Schneiderian membrane retaining its natural healthy hue. The ulcer was left to take its course, and it gradually healed like an ordinary wound. The horse was kept a considerable time, but he seemed to preserve his full health, and had not even chronic glanders.

"In a shed near the forge, and occasionally used as a stable for the old and condemned horses, and where they were often loose, and mingling among each other pell-mell *(pêle-mêle)*, our pupils may have seen for more than two months a little horse,

not ten hands high, with fracture of the thigh, near the hip joint, limping in the midst of the glandered horses and mules, of whom there were always many with acute mange. He is unable to reach the rack, and therefore, gliding from one to another, he lives upon what they pull down and leave. During the whole of this time he was exposed to contagion of every kind. In his turn he was slaughtered; but there was not a vestige of glanders found upon him.

"I state these facts just as they occurred."

Veterinary Jurisprudence.

Fisher *v.* Matthews.

In The Veterinarian of August last, we gave an account of this action for the loss of a horse by means of the careless administration of improper medicine; and when we read the evidence of the excoriation and swelling of the mouth and lips—the inability to eat—the death occurring so soon after the administration of the medicine—the inflammation of the larynx and the bronchial tubes, and the admission of the defendant, thrice repeated, that he had been drenching a cow from the same bottle on the preceding day, and that the croton oil which had been left at the bottom of the bottle must have destroyed the horse—when we read all this, we regretted, and we expressed that regret, that "Mr. Matthews could have been deluded to defend an action like this."

Messrs. Stanley and Heane, of Newport, the solicitors of Mr. Matthews, have expressed considerable dissatisfaction at the employment of the term "delude." They say, and properly, that it implies beguilement, imposition. It insinuates that they artfully, and for lucre's sake, led Mr. Matthews to the defence of an action in which, according to the evidence produced, he neither could or ought to succeed. Our reply is, that we had not in our minds the slightest reference to these gentlemen, of whom we then knew nothing, but of whose high respectability and character we have since been informed. It was a species of self-delusion that we had in our mind's eye. Some years ago a valuable horse was destroyed by the careless administration of a drink by one of our own house-pupils. An immediate confession of the truth, which might, perhaps, have been concealed, and an offer of reparation,

knit still closer the ties of friendship as well as of professional connexion which had subsisted between ourselves and the owner of the horse—this was passing in our mind, and we regretted that Mr. Matthews could have persuaded himself that there was any other way of getting out of such a scrape. We therefore disavow any allusion to Messrs. Stanley and Heane, and regret that we should have used the ambiguous word that escaped our pen; and we are further glad that we are enabled to set these gentlemen perfectly right with the public in this affair; for we happen now to have in our possession a copy of the instructions, and the opinion under which they acted, and which, as giving them a clear view of the whole of this singular case, may not be uninteresting to our readers.

"On the 15th of April 1838," says Mr. Matthews, "I received orders from Mr. Fisher's coachman for Mr. R. Fisher's horse to have a dose of physic on the following morning.

"On Monday, the 16th, I sent my man with a draught for him, which consisted of ol. croton fifteen drops, Barbadoes aloes three drachms, ginger half a drachm, and a little linseed meal. This has been the dose and quantity he has had from me repeatedly, being obliged to give him such medicine in consequence of his bad disposition to feed or take water after aloes alone. The horse received the draught in the presence of Mr. Fisher jun. and his own servants, who assisted. The horse received it without any disturbance whatever. He was not heard to cough during the time of drenching, or after he had taken the drench, which must inevitably have been the case had the least portion of it, or even water alone, escaped the epiglottis and entered the trachea. My man, after giving the draught, gave Mr. Fisher's servant every particular direction as to treatment, &c.

"On Tuesday, the 17th, I saw the horse early, and found him doing as well as he usually did when in physic. He was slightly purging. The lips were a little swollen, but this disappeared before night, and which I considered to be of no consequence, knowing it to have been the case in some of his previous times of having medicine. I examined him as minutely as possible. The pulse was from 35 to 40. I then examined his manger, to see if he had taken the mash which he ought to have had, instead of which I found the remains of a feed of oats, which was quite contrary to my directions. I then asked the man to fetch him some water, part of which he drank in my presence, that of the man, and of Mr. R. Fisher, jun. I then directed the man how to treat the horse, and left him.

I saw the horse again about six o'clock in the evening of the same day. The swelling which appeared about the mouth in the morning had disappeared. The horse was doing well—the pulse was from 40 to 45, and the extremities warm.

"The gardener being with me, I wished to see the coachman who had been looking to the horse before. He told me the coachman was waiting at dinner, but he would tell him any thing I wished about the horse. I then asked him to fetch some water to put to some meal left at the bottom of a pail which he had previously taken water from. He did so, and the horse took a part of it freely in his and my presence. I then left orders with the man, and left the premises; but before I left I particularly remarked how well the horse was doing, and he, the man, replied 'Yes! he thought he was, and not

likely to die yet.' He farther said, that 'he was good for nothing, or of little value dead or alive.'

"On Wednesday, the 18th, about nine o'clock in the morning, Mr. Fisher's coachman came to my house, saying that the horse was very ill. I immediately went down to him, and found it to be the case; the cause of which I was quite at a loss for. I minutely examined him, and found the pulse scarcely perceptible—his head hanging very low, and the hair very much rubbed off from his hind quarters, which gave me every reason to believe then that he had been cast in the night with his halter. Although it was my wish that the horse should be at liberty, and not have a halter on at all, I twice found him tied the full length of his halter, and set him at liberty myself.

"I considered it impossible for him to live long, notwithstanding which I thought it proper to let blood, which I did to a very small extent, faintness making its appearance.

"Mr. Fisher, and Mr. R. Fisher, jun. came to the stable, and directly accused me of having poisoned the horse. He died in less than two hours from the time I first saw him in the morning.

"I had a great wish to open the horse, but Mr. F. objected, saying, he did not think he would have him opened, but if he did, he would send for Mr. Robinson, V.S. of Sheffield.

"On the following day, the 19th, he accordingly did, but wished to do it without my knowledge. Mr. Robinson came, and objected to open him, in consequence of Mr. Fisher refusing my being present at the time he examined the body; and Mr. Robinson returned without making any post-mortem examination. Mr. Hickman, V.S. of Shrewsbury, was then called in, and owing to Mr. Fisher's refusing my being present, he also refused to open the horse. At length Mr. Hickman called upon me, and I went with him.

"On this day Mr. Fisher, sen. accused me in the street, and before many of my friends, of having poisoned his horse.

"When the horse's body was examined, the whole of the abdominal viscera were in a perfectly healthy state, except that adhesion to a large extent had taken place between the colon and the diaphragm. In the thorax, the left lobe of the lungs was found to be in a very collapsed state—in the right lobe was found a degree of inflammation, but not to any great extent. The bronchi and its tubes were highly inflamed, and in some parts of them were quantities of coagulated blood. The membrane lining the trachea was inflamed, and that of the larynx and epiglottis slightly so. This might have occurred from oppressed breathing the night previous to his death. The left lobe of the lungs, I would say, had been in a disorganized state for some time. It was remarked by the bystanders, that he must have been a broken-winded horse previously.

"When the skin or integument was removed from the front part of the shoulder and neck, the muscles and bloodvessels exhibited great extravasation of blood, such as I have repeatedly seen when a horse has suffered from strangulation, or death occasioned by his being cast, as we generally term it, with his halter; and the hair was rubbed much from his hind quarters, as though a halter or rope had been round them.

"The stomach and its contents were taken to Mr. Huxley, chemist, &c., and examined by Messrs. Huxley, Hickman, Duncalf, R. Fisher, and J. Smallwood, when it was pronounced, by all the parties present, to be in a perfect and very healthy state, and its contents free from poison of any kind. This was four days after he had taken the medicine.

"On the same evening, Mr. Palin made every inquiry of Mr. Hickman and Mr. Duncalf, at the Crown Inn, as to the nature of the case; when he was

informed by these gentlemen, that I, Matthews, was, through the examination that had taken place, freed from any kind of charge whatever, and quite blameless. Mr. Hickman further said, that the horse had died of suffocation, but the cause of it he was quite at a loss for.

"The horse in question has been in bad habit ever since he came into Mr. Fisher's possession. A very few months after he had him, he was seized with acute inflammation of the liver, and it was with great difficulty that he was saved. I was obliged to attend him night and day, with the assistance of Mr. Fisher's servants. The horse remained very ill from April the 5th 1833, up to the 19th of the same month, and every one that saw him thought it impossible for him to recover. Being a difficult horse to ball, we were obliged to give him all his medicine in a liquid form, and his lips, and all about his mouth, were at that time so much swollen and inflamed, as to prevent us from putting on a twitch or any other instrument to raise his head. We were obliged to raise it with the arm alone.

"Ever since that attack the horse has been a delicate feeder, and when in the stable was never without medicine to be given in his corn or mashes. He was very liable to retention of urine, or difficulty of staling. He was very much disfigured with bursal enlargements on all four legs, so much so as to occasion lameness. He had on each hock what are termed bog-spavins. I have repeatedly blistered all his legs, and applied charges to them more than once; and, last of all, on the 17th of October 1837, I was obliged to apply the actual cautery, or fire him on his hind legs, in order to make him in any shape serviceable to his owner; after which he was turned out, and remained out until the beginning of April 1838, or the latter end of March. This horse, according to my judgment, was more than twenty years old."

Such were the instructions which Mr. Matthews sent to his solicitors, Messrs. Stanley and Heane. They very properly determine to have the best veterinary advice on the subject, and, appending the following observations and the certificate of Mr. Hickman, they sent the whole to Mr. Coleman for his opinion.

The question in this case is, whether the dose administered to the horse was composed of proper and fit ingredients, and whether, if so, it was properly administered, and the horse skilfully treated. It should be stated, that this horse had frequently, while in the possession of Mr. Fisher, been under the treatment of Mr. Matthews, and that he was a most uncertain horse with his physic, whatever being given to him never acting for several days. In fact, he once had a dose of eight drachms of aloes which did not operate for three days. Another was given of nine drachms, and this not operating, Mr. Matthews after that took to give the horse croton oil and aloes.

The dose complained of on the occasion, and which has given rise to this action, was composed of fifteen drops of croton—a fourth-part of a drachm —three drachms of Barbadoes aloes, and one drachm of ginger.

For the efficacy and safety of administering croton oil, see from page 554 to 559 of the second part of a series of Elementary Lectures on the Veterinary Art, by Mr. W. Percivall; also Blaine's Treatise on the Veterinary Art, third edition, page 670; and page 211 of the publication on The Horse, by the Society for the diffusion of Useful Knowledge.

The following is a copy of Mr. Hickman's certificate as to the cause of the horse's death :—

"*Shrewsbury, May* 1, 1838.

"Sir,—When I examined your horse on the 19th of April last, I found the stomach, small and large intestines, and the whole of the abdominal viscera perfectly healthy; but the larynx, epiglottis, trachea, and particularly the membrane lining the windpipe, the bronchial tubes and lungs were in a

high state of inflammation, as well as the substance of the lungs, and which, in my opinion, was the cause of the horse's death; it being most probable that a portion of the drench went into the larynx, and produced such inflammation.

"I am, Sir, your most obedient servant.

"To R. Fisher, jun. Esq. "EDWARD HICKMAN."

Mr. Coleman returned the following certificate :—

"*Royal Veterinary College,* 14*th July* 1838.

"I certify, that I have examined this statement made by Mr. Matthews, of Newport, of his professional treatment of a horse said to be the property of Mr. Fisher, and it does not appear to me that the dose of purgative medicine was excessive or improper, or that any ignorance or neglect on the part of Mr. Matthews in the treatment of the horse has been demonstrated; and without *gross ignorance* or *neglect* no professional man, in my opinion, is responsible for the effects of any medicine.

"EDWARD COLEMAN,
"Professor."

[We do not feel ourselves called upon to inquire what discrepancy there may be between the statement of Mr. Matthews and the evidence given in court; but we have no hesitation in saying that, *on the faith of that statement*, we should have returned a certificate similar to the one received from Mr. Coleman, and that, a fair offer of compensation or reference being refused by the other party, we, like Messrs. Stanley and Heane, should have advised our client to defend the action.—Y.]

BRISTOL ASSIZES, August 18, 1838.

COATES *v.* STEPHENS.

Mr. Joseph Coates.—I am brother to Mr. William Coates, the plaintiff. He resides at Wrington, ten miles from Bristol: he is a surgeon. In July in the last year I went to Stephens's, the defendant, about a horse: my brother requested me to purchase one for him, and I went to Stephens. I saw Stephens the first time I went there. I told him I wanted a horse to go in harness, for my brother: he shewed me several, among which was a roan mare; I looked at her, and took up her foot. Upon my taking up her foot, Stephens said, "Oh! you need not look at it, for I warrant the mare perfectly sound." I told him I should depend on his warranty. I, after this, drove the mare down Temple Street, up the Cut, and Redcliff Street: Stephens's man, John, was with me. As we were going along the Cut* I

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* "The place where she coughed is about a mile from the stable, and consequently could not be the effect of coming out of the stable."—*J. Kent.*

heard the mare cough. I mentioned it to the man, who said, "Oh! Sir, it is nothing; it is only her coming out of the hot stable into the change of air." I liked her; and taking this for granted, I, on the 20th, the succeeding day, purchased her. With her I got this warranty. Stephens and his wife were together when I received it, and one of them gave me the warranty.

The receipt was here put in—

"Received of Mr. Joseph Coates, the sum of 25 guineas, for a Chestnut Mare, warranted sound, and 5 years old.

"THOS. STEPHENS."

I then drove her to Wrington. I was about an hour and three quarters going: it is a very hilly road, and I drove her very gently. While I was going from here to Wrington I observed that the mare coughed several times. I delivered her to my brother, and remarked to him on her cough, and he wrote to the defendant about it. About the end of July I met the defendant in Bristol—I believe in Berkeley Place—and I said to him, "Why did'nt you answer my brother's letter?"—referring to the letter which was afterwards read. He said, "Oh! I will make it all right, Sir; I have been out of town purchasing horses; but the mare has nothing but a little cold." I am in no profession. The letter was here put in.

Cross examined.—I reside at Downend. I do not live with my brother. I did not buy her for the purpose of giving her to my brother. I did not say so at the time. I told Stephens that I had purchased her for my brother; and that he very well knew. It was a very hot day when I drove her to Wrington. I started about the middle of the day: I drove her very gently: she was not much heated, for I walked up the hills, wishing to shew my purchase to the best advantage.

Stephen Cullinan.—I was in the service of the plaintiff in July 1837. I was his groom. I remember the roan mare which Mr. Coates purchased. I attended to her, and put her in the stable upon her coming to Wrington. I observed her coughing all the afternoon after she came home. I remarked the cough to my master. I did not give her a mash that day; but I did on the next day, for she still coughed. On the 22d, she coughed all day: she did not go out that day. On the 23d, master observed that she was very ill; and he sent for Cooke, the farrier, who bled her, and gave her a mash. On Monday she had a purging ball given her, and she was kept in all that day. On the 25th, she had the cough still on her, with a running from the nose, and a bad smell: she was not used that day. On the 26th, she was not better. On the 27th, master drove her about three-quarters of a mile, to Haviot Lodge; there was a patient of my master's there. When she came back she did not go out again that day;—when she came home I did not walk her about, but put her into the stable, and cleaned her down. On the next day she appeared a little better, and was driven to Blagdon gently: I went with her: a cloth was taken and put on her when we stopped. On Sunday she was sent to drive my mistress to church and back: it is about three-quarters of a mile. She was then sent, on the 5th of August, to Mr. Kent: I did not go with her. She came back the same day: my master went with her; and when he came back he brought home some balls, and I gave her one of them. In two days after, on the 7th, I was sent with her to Mr. Kent's, who examined her, and wrote a certificate. I left her myself with Fisher at the Repository. I took her first to Stephens; but as he would not receive her, I left her at the Repository.

Cross examined.—It was about three or four o'clock on the first day when

she was brought home: she was not very warm. I did not hitch her up at the door, but I took her into the stable, and cleaned her. I do not know of the influenza being then at Wrington. I do not know, nor do I believe, that half the horses in the parish were ill. There was another horse in our stable: it had no cough. I first told master of her cough. I did not squeeze her throat to make her cough. I gave her no mash that day, nor the next; nor did any thing with her. I went to Haviot Lodge with my master: it did not rain; it was a very fine day. We stayed there half an hour, and I walked the horse about. When we went to Blagdon it was also a fine day: we stayed there a quarter of an hour; and we then called on another patient at Langford. It did not rain; it was a fine day.

John Cook.—I am a farrier. I live at Wrington. In July 1837, on a Sunday, I was sent for to Mr. Coates's, to see a mare. I saw her and bled her: she had a very bad cough, and discharge from the nose. There was a disagreeable smell; it sometimes proceeds from a cough: when the breath is short it smells; it is sometimes a symptom of glanders. I shod the mare: she had a thrush in one of her feet. I steamed her head; and the next day I saw her, and gave her a ball.

Cross-examined.—I do not know that many horses died about that time with influenza. I do not know that Mr. Baker had a horse that died about that time. The influenza was there about two years ago—but I do not know that it was twelve months ago. She had a very bad cough—bleeding would be good for her from whatever cause proceeding.

Mr. John Kent.—I am a veterinary surgeon residing in Bristol. I have been so many years. On the 5th of August, 1837, Mr. Coates brought me a roan mare to examine. She had a bad cough, and a copious discharge from the nostrils. I examined her to ascertain the nature of that cough. It must have been of some standing, on account of the discharge from the nostrils, and the membrane of the nose not being red, which it would have been if it had been the first three or four days of her being affected. The inflammation would proceed three or four days before the discharge, and I might therefore infer that it had been some time standing. The discharge was copious and fœtid. There was inflammation of the windpipe, and, no doubt, of the bronchial tubes, from the deep heaving of the cough. Inflammation going on is the cause of the cough. The horse in that state was certainly not sound. When a horse has such a cough you cannot tell whether it will terminate fatally or be cured. I have heard the evidence given by Mr. Coates, and the young man the groom, and the treatment of the mare was very proper treatment. Cooke's treatment of her was also very proper. If that horse had that cough at the time of the sale it was unsound. I looked the horse all over. Mr. Coates only complained of the cough and a suspicion of glanders. But upon examining her I found that the hock of the near hind leg was enlarged, and as hard as bone. It was a spavin.*

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* I am quite satisfied, and long have been, that in cases of what is commonly styled bone-spavin, very few instances occur where the bone is at all affected, and that the enlargement, although to the touch it is as hard as bone, yet is strictly confined to the ligaments of the joint, and is as much under the control of medical treatment as ligamentous thickenings of other joints. When there is disease of the bones of the hock it would be perfectly absurd to expect its removal from either blistering or firing, or setons or rest, or from all put together; nor is there much better ground to expect a removal of the lameness, for as soon as the bones become diseased, the joints of the hock, one or more, become obliterated, and never can be re-

Spavin is a thickening of the capsular ligaments. The effect of it is, that it causes the animal to go stiff, and very frequently lame, and this animal did go lame. Blistering and rest might have cured it—it is frequently cured. This was of such an extent as to impede the action of the joint. From the appearance which it put on, I should say it had commenced for two months. I am quite certain it had more than a fortnight or three weeks. I gave a certificate to Mr. Coates's man. My clerk went with Culliman to give the notice.

The certificate of unsoundness was here read as follows :—

"Having examined a mare, in the possession of Wm. Coates Esq., this is to certify, that she is unsound from chronic inflammation of the throat, attended with enlargement of the submaxillary glands, discharge from nostrils, and saliva from her mouth, and stinking breath, and with a cough, and also from disease of the near hock, commonly styled bone-spavin.

"Given under my hand, this 7th day of August, 1837.

"P. S.—I examined her on the 5th instant also, and found the same symptoms. "JOHN KENT,

"*Veterinary Surgeon, Bristol.*"

Examination continued.—That lameness would not have been visible to an ordinary person if she was gently used. Veterinary surgeons are sharp in detecting such lameness. We can detect lamenesses which ordinary men cannot. All men are not ordinary men. This was a bone-spavin of the near hock. It was a hard one. I did not say that it was a large one. If it was not a large one; I suppose it must have been a small one. I did not say it arose from hard work, but it is the common result of hard work. Horses may be spavined which have not been hard-worked at all. I have seen the horse to-day. It has spavins of both hocks, but the largest spavin is now in the off hock, more so than in the near one. It is less than when I first saw it. It is still as hard. I am certain there is a spavin there: I can say so because I saw it, but I cannot say what others might see. I do not know Captain Bush. I do remember examining a horse of a Mr. Bush. I said that it was lame, and that I believed it had incipient ring-bone. I gave a certificate respecting that horse, but only as to its lameness. I said that it was lame, and that I believed that lameness arose from the incipient formation of ring-bones.

Did you not afterwards examine this horse, and certify that it was sound?

I was again sent for to examine a horse, and was directed not to examine it as to general soundness, but only as to cough. It was by a person named Raxworthy, and I gave a certificate of its soundness in that respect. Mr. Raxworthy said he had purchased it for his uncle to work two years gently, and then it would be given to him to hunt with. I did not examine that horse as to its legs: I have never said at Gloucester that I did. The circumstance you allude to happened about twelve years ago. I say every horse is unsound that has a cough: that is my opinion, and not mine only. In my judgment inflammation usually exists for several days before the cough. I examined this horse thoroughly, and all that it had was the cough, the bone-spavin, the thrush, and inflammation of the bronchial tubes. The bronchial

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stored: yet, when veterinary surgeons are consulted on spavins, they advise such treatment, and the perfect removal of lameness in very much more than an average of cases justifies them in doing so. I never yet knew a veterinary surgeon who refused to treat horses for spavin, or who uniformly said to his employers, "This horse has a bone-spavin, blow his brains out; he never can work again!"—*J. Kent.*

tubes are not the lungs, although they are in the lungs. If I spoke of a horse having diseased lungs, I should not mean the bronchial tubes. A chronic inflammation is that species where the first inflammation has gone off: I mean the progress of that inflammation where the first violent symptoms have given way. It is one that will last or has lasted for some time. When inflammation has in some degree abated, it may remain for some time before cured, and is called chronic, as distinguished from acute. It was quite clear to my eye that the horse was lame. It was quite perceptible to a veterinary surgeon.

Re-examined.—I mean that the acute inflammation had subsided, although I cannot fix the time. The bronchial tubes are the divisions of the windpipe which convey air to the lungs. The whole of the bronchial tubes are in the lungs. My charge for medicine and examining the horse with a view to its soundness was one guinea. The medicine I charged twelve shillings. I sent twelve balls.

Mr. John Fisher.—I keep a repository for the sale of horses. In August, 1837, I had this mare for sale. I received her on the 9th, and was to sell her on the next Thursday, unless she was previously fetched by Mr. Stephens. I sold her on the Thursday for seventeen guineas without a warranty. My charge was, including duty, £3..12*s*..9*d*., leaving a balance of £14..4*s*..9*d*.

Cross-examined.—A gentleman, named Elliott, purchased her.

This was the Plaintiff's case.

Mr. Sergeant Bompas, in the course of his reply for the defendant, denied that the mare had any cough at the time of sale, or, even if she had, he said that there were two kinds of cough, one of which constituted unsoundness; the other, amounting to little more than a slight cold, was not unsoundness.

The learned Judge, *Baron Parke,* told him that every kind of cough was unsoundness, and so he must tell the jury.

The Sergeant replied, that, at least, general custom drew a distinction between a sound and an unsound cough, and that the rule of law will always bend to a general custom.

The Judge replied, that if there is such a custom, it was necessary for him to prove it.

The attempt was not made; in fact, no such custom exists.

The following witnesses were called for the Defendant:—

Samuel Hicks Withers.—I am proprietor of the Horse Bazaar, Bristol. I had the roan mare in my stables from the 1st to the 19th July. I examined her on the 1st; it was in a very slight way, for I was only asked as a friend. I saw nothing the matter. At the end of the eighteen days I sold her to Stephens. I warranted her sound for Mr. Biss. I have seen her to-day, but I have not examined her: she had no cough when I sold her; it was about mid-day when I sold her. Lansdown was at that time one of my grooms: he had the care of her in common with others.

Cross-examined.—Mr. Biss sent her to me to sell: he is not a friend, for he is above my station in life; he is a customer. I just looked at the horse, and put her into my stable; and there she remained until she was sold:—my stables were pretty full. Stephens came to my stables, and I shewed him the mare: I do not know if he had seen it before: we were about a quarter of an hour agreeing as to price. I sold her for £23: the warranty was not in writing.

Re-examined.—Stephens was there long enough to thoroughly examine her: she had no cough on that day.

William Lansdown.—I am coachman to Mr. Jeremiah Osborne. I was groom in Mr. Withers's stables on the 19th July 1837. I fed the mare in

question: she had no cough to the best of my recollection. I did not observe her to have any cough at all.

Cross-examined.—I fed her with the other horses, and that was all I noticed her by;—when she was sold and went away, I saw her go. I do not recollect her having a cough: to the best of my recollection, I never heard her cough during the time.

Re-examined.—If any of the grooms saw any thing the matter with any of the horses, they would report to me. I was about the premises all the day. I was foreman.

Mr. Gabriel Goldney.—I am a wholesale china and earthen-ware manufacturer. I know the roan mare in question. I borrowed her of Stephens in October 1837. I drove her to the Land's End and back. I had her out ten weeks; she coughed a little, but so slightly that I took no notice of it:—she performed her journey well, and had no lameness. I sometimes drove her thirty-five miles a-day; but generally shorter journies.

Cross-examined.—I generally drove her moderately. I drove her one day from Wellington to North Curry, and from thence to Taunton in one day.

Re-examined.—I found no unsoundness in her.

Robert Smart.—I am traveller to the Messrs. Lorymer. I had the horse the following day after Goldney brought her home. I drove her continually for about six months. I have taken her out long journies. I have driven her as much as 210 miles in one week: she was a very useful mare, and suited me very well. I drove her last night. I should say she was sound: she was not lame;—she coughed occasionally*, but all horses do so:—she cost me nothing for medicine on the road; and I do not believe that she was ill for one day. She came home better than she went out.

George Williams.—I am a veterinary surgeon residing at Bath. I examined the mare on Saturday last: she was then in Lorymer's stables. I discovered nothing the matter with her; she was perfectly sound. I coughed her; there was nothing the matter. She has no bone-spavin;—she went particularly free. Spavin can sometimes be cured. She has no thickening of the capsular ligament.

Cross-examined.—I have practised at several places. I practised in Bristol four years ago. I found it answer. I left Bristol because of my brother's business in Bath, and I thought it would be advantageous to me. Both hocks go remarkably free; there is nothing whatever the matter with them. I have known when the capsular ligament has been enlarged, that it has subsided under treatment or rest;—the hock is bound by transverse ligaments, and when there is disease, it is in them that it is: they are covered by the capsular ligament. The deposit is sometimes lymph;—it is called bone-spavin when, perhaps, only lymph is deposited. The capsular ligament is ultimately affected by bone-spavin, and it then becomes anchylosed; the

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* When both Goldney and Smart, witnesses for the defendant, acknowledge that the mare did cough, and each of them had driven her several hundred miles, and could not be mistaken in the matter, it is rather singular that the veterinary surgeons who were subpœnaed for the defendant should so positively swear that she did not cough at all. Surely a little more cautious language might have been used. They might have adopted Mr. Sergeant Bompas's law, that there is "a sound cough." I do here assert that the mare has, at this time, disease of both hocks; is lame; and has induration or hepatization of the anterior portion of one or both lobes of the lungs, and is thick-winded, and still has either "a sound or an unsound cough."—*Substance of some of Mr. Kent's Notes.*

transverse ligaments are first affected, and then the capsular. There are joints which have capsular ligaments alone.

Re-examined.—Before bone is formed it may be removed by blistering, which would not leave a mark, but firing would: it depends on the neatness of the operator.

Mr. John Norfolk.—I am a veterinary surgeon residing at Bath. I examined this mare on Saturday last, at Messrs. Lorymer's stables. I examined her hocks very particularly; there are no bone-spavins, not in either hock. She is not lame, but perfectly sound in my opinion*. I coughed her.

By the Court.—Bone-spavin is a deposit of bone: there is no stiffness or enlargement of her joints.

Mr. R. Rawlings.—I am a veterinary surgeon living in Bristol; I have examined this mare: the first time I examined her was on the 30th of last May: her hocks are perfectly sound. I saw her also last Saturday; I coughed her: there is no enlargement of the hocks; I am quite positive there is no disease about her. I lived formerly at Wells. Hocks may be large or small, and well formed if either.

Mr. N. P. Leigh, sworn.—I am a veterinary surgeon of Bristol: I have been so more than thirty years. I examined the mare on Tuesday last; I did it carefully. There is no enlargement of the hocks; they are perfectly free from disease; there is no stiffness. I coughed her, and she is perfectly sound.

This was the Defendant's case.

Verdict for the Plaintiff, the full amount claimed.

[This was a very proper verdict. The mare was unsound *at the time of purchase.* The professional witnesses for the defendant speak principally to the state of the mare *at or a little before the trial.* This is the true and the satisfactory explanation of the discrepancy of evidence. Mr. Kent may rest perfectly satisfied with having beaten, and fairly beaten too, the four veterinary surgeons that were brought in array against him, while there is no impeachment of character and ought to be no breach of friendship on either side.

At the time when, we trust, that better days are preparing to dawn on our profession, let us not wilfully and inexcusably prolong our degradation by any petty quarrels with each other.

As to the "sound" and "unsound" cough of the learned Sergeant, it is too *outré* to deserve any laboured refutation.—Y.]

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* Mr. Norfolk's definition of bone-spavin is concise: certainly "bone-spavin is a deposit of bone;" but if Mr. Norfolk means by that, that every diseased enlargement of the hock, which is commonly designated bone-spavin, is a deposition of bone, he must excuse me for not being of his opinion.—*J. Kent.*

ON THE NERVES AND BLOODVESSELS OF THE STOMACHS OF RUMINANTS.

By Professor Gellé, *of the Royal Veterinary School of Toulouse.*

Veterinary surgeons have long regarded the stomachs of the ox, and particularly the rumen, the reticulum, and the maniplus, as provided with few nerves and bloodvessels, and as consequently endowed with a very slight degree of sensibility, and little susceptible of presenting the phenomena which characterize inflammation. Some pathological facts, however, have proved to me the inaccuracy of this opinion. Other veterinary surgeons have thought with me; and inflammation of any or all of the three first stomachs of the ox must be now acknowledged occasionally to occur, as well as that of the abomasum.

When I was appointed professor at this school, I endeavoured to obtain some definite opinion on this important subject; and in studying with care the neurology and angiology of these viscera, assisted by some of my pupils, I have ascertained that the œsophagean nervous cords having reached the paunch, furnish it with a multitude of branches.

While M. Lafore occupied alone the chair of anatomy, I could not, with all the devotion I wished, pursue those researches, the importance of which deeply impressed my mind; but when jointly with him I filled that chair, there was no longer any obstacle to the full accomplishment of my wishes; and that which I am now about to describe was the product of our joint labours. I owe much to his anatomical knowledge, to his assiduity, and to the peculiar address with which he used the scalpel.

I will at present confine myself to a simple description of that which presented itself to us; but in another and more laboured work, I will state the physiological and pathological considerations which these anatomical facts presented.

The nerves which supply the stomachs of the ox and other ruminants are furnished by the *pneumogastric* (the organic motor nerve of Youatt) and the *trisplanchnic* (the *sympathetic* nerve, or the *secretory, nutrient* nerve of Youatt). I shall at present attempt a succinct description of the first, and speak only of the second so far as it has relation to the functions of the digestive organs.

The pneumogastric nerve, or par vagum, the tenth pair of cerebral nerves—the eighth according to the human anatomist (the tenth of Youatt), takes its origin in the ox, as in the horse, from the lateral and central parts of the rachidian bulb (the cor-

pora olivaria) by many filaments, which unite and form a cord of considerable size, and escapes from the cranium with the ninth and eleventh accessory pairs of Willis. In attentively examining the pneumogastric of the ox at its origin, we see distinctly that the roots of the eleventh or accessory pair mingle with those of the tenth, or pneumogastric, before these penetrate into the nervous ganglion which is constantly found in the horse and the ox at the origin of the par vagum; and that these two pairs of nerves, the tenth and the eleventh, after having escaped from this ganglion, as well as from the spinal cord, remain intimately united for the space of six or seven centimetres (between two and three inches).

The pneumogastric, after having separated from the eleventh pair, sends some fibres to the guttural ganglion, while some pharyngeal and other branches go to the cephalic artery; but it particularly furnishes *two superior laryngeal nerves:* an *anterior*, and the larger of the two, and which often supplies a pharyngeal branch; and a *posterior* nerve, smaller and longer. But that which is peculiar to the ox is the two anastamosing branches, with the recurrent and the pharyngeal, viz., the posterior one, the smaller and longer one, with a branch which seems to come from the recurrent. This anastomosis has a plexous character at the upper part of the first cartilages of the trachea above and behind the larynx. The superior laryngeal trunk, the larger of the two, unites itself with the recurrent, or inferior laryngeal, by means of a branch coming from the latter, and which passes under the thyroïd cartilage for the purpose of uniting with the superior and anterior laryngeal nerve. The anastomosis of these three branches, destined for the larynx, forms a plexus situated at the back of that organ, and under the lateral origin of the trachea, whence springs a retrograde cord, which abuts on the inferior surface of the œsophagus, and ramifies there.

Each principal cord of the two pneumogastrics follows the course of the jugular vein in company with the trisplanchnic nerve. Having arrived at the inferior cervical ganglions, the vagal nerves separate from the trisplanchnics. Both of them furnish branches to the trachea and to the cardiac plexus, but the right pneumogastric particularly sends a considerable branch to the auricles of the heart.

There likewise, at this situation, emanate from these nerves the inferior laryngeal or recurrent nerves, right and left.

The two pneumogastrics then go to form the bronchial plexus. They each receive, in this place, a trisplanchnic branch coming from the plexus, which surrounds the inferior cervical ganglion, and sometimes springs from the ganglion itself, as we saw in

February 1837; but more commonly from the first, second, and third ganglion of the thoracic portion of the trisplanchnic. This little nerve, which goes to rejoin the bronchial plexus, and contributes to its formation, travels obliquely, crosses the sub-dorso atloïdean muscle (the longus colli), arrives at the side of the aorta, forms there a plexus provided with a ganglion, whence proceed some filaments to the bronchial plexus, while others distribute themselves to the aorta and the œsophagus. This description confirms the important discovery of M. Hugier, in 1833. The two pneumogastrics, after having formed the bronchial plexus in union with the branches coming from the trisplanchnic, terminate in the two œsophagean nerves, which appear as if they were the continuation of the principal cords, the right forming the superior, and the left the inferior œsophagean nerve; but these two nerves interchange a vast number of anastamosing branches, so that each of the œsophageans appear to belong equally to the two pneumogastrics.

The inferior œsophagean nerve, the least of the two, traverses the diaphragmatic opening, and reaches the paunch. Having arrived at the stomach, it furnishes a small branch situated to the left, and low down, which passes between the diaphragm and the anterior surface of the reticulum and proceeds to the posterior surface of the liver, in the substance of which it ramifies, as also in the gall-bladder. Having arrived at the origin of the ductus choledochus, this small branch re-unites with a filament of the trisplanchnic, which accompanies the hepatic artery. They form together a plexus, the nerves emanating from which penetrate into the parenchymatous structure of the liver and accompany the hepatic artery, while a continuous branch follows the ductus choledochus to the duodenal portion of the small intestines. I mean to say that these compound nervous filaments penetrate together into the substance of the liver, following the organs of the secretory apparatus of the bile until their termination in the duodenum. There exists a conformation very similar to this in the dog.

I have said that the inferior œsophagean nerve abutted directly upon the reticulum, where it forms two plexuses, without receiving any contributory branches. From this stomach, the principal branch takes its course to the great curvature of the maniplus, where it forms more plexous ramifications, and at length it terminates in a large plexus on the great curvature of the maniplus.

In the course of its passage this œsophagean nerve furnishes the following branches: 1st, From the first plexus which is formed on the reticulum, near the œsophagus, there are divers

ramifications, superior and anterior, which distribute themselves, some on the reticulum, and others on the rumen, round the termination of the œsophagus, and in the inferior and anterior scissure of that stomach, in order to ramify on its left sac. Two other filaments likewise gain this anterior scissure, pass between the two lobes, and ramify on the anterior surface of the paunch. 2d. From another plexus which this œsophagean nerve forms on the reticulum, five or six other nervous branches are given off, which arrive at the maniplus, and distribute themselves on its membranes. 3d. From a plexus on the maniplus other filaments arise, which spread themselves over that stomach: and, finally, from the terminal plexus, which we have already stated as existing on the fourth stomach, issue divers filaments, the greater part of which penetrate into this stomach, while others go to the pyloric orifice, and some to the small intestines.

The superior œsophagean nerve, the more considerable of the two, is situated between the aorta and the œsophagus. It penetrates with the latter vessel into the abdomen, gains the superior surface of the paunch, and forms there a vast plexus, which extends from the ninth dorsal vertebra to the first lumbar, occupying a space of about nine centimetres (nearly three and a half inches). In order to form this plexus, which has for its centre a nervous ganglion, the superior œsophagean receives many trisplanchnic branches from the cœliac plexus. From this plexus, or rather from the two kinds of nerves crossing and mingling with each other, arise the following compound branches:—first, four anterior branches, having one common origin, reach the maniplus, the reticulum, and the anterior sacs of the rumen. One of these goes from the maniplus and the rumen to the two curvatures of the abomasum. Secondly, many lateral branches which diverge to the right and the left, over the sacs of the rumen, and also towards the orifice of the œsophagus. Some of these nerves anastomose with filaments coming from the inferior part of the œsophagus. Thirdly, branches which take a direction posteriorly, and to the left, and go to ramify over the left side of the paunch. Fourthly, from the posterior part of this plexus there issue three or four nerves also of a plexous character, which follow the superior fissure of the rumen, accompany the arteries, gain the posterior and inferior scissure of that stomach, and ramify on the surrounding parts. Fifthly, from the same situation, but a little above the preceding branches, issue one or two white cords, somewhat flattened, which proceed to the cœliac and mesenteric plexuses. The abomasum also receives other retrograde branches from the small intestines.

The organs of digestion in ruminants then receive,—

First,—Simple nerves coming directly from the pneumo-gastric by means of the inferior œsophagean cord.

Secondly,—Compound nerves, plexous and ganglial, emanating from the superior œsophagean, and also from the cœliac plexus, and which, together, compose the grand superior cardiac plexus, which has been described. We remark, besides, some nervous filaments, recurrent, and still more compound, returning from the small intestines to the abomasum, and to which they furnish numerous plexous branches which ramify over its larger curvature.

Thirdly,—A pneumogastric nervous branch, coming from the inferior œsophagean, proceeds to the liver, and the gall-bladder, and accompanies its excretory canal to the duodenum; and this not only in the ox, but in the dog, an animal provided, like the ox, with a biliary reservoir, while no such provision is found in any of the horse species.

All these nerves must be dissected, and studied again and again, in order that a proper notion can be formed of them. One is astonished at the innumerable quantity of their plexous filaments, the reunion and interlacement of which, beneath the peritoneal membrane, form an admirable reservoir, whence proceed a crowd of minute and more than hair-like branches which penetrate into the membranes of these viscera.

The inferior œsophagean branch spreads itself everywhere over the three first stomachs, besides some filaments which it sends to the liver and the abomasum; while the complex nerves emanating from the plexus formed by the superior œsophagean and the trisplanchnic branches go principally to the fourth stomach and the intestines, and in comparatively small quantity to the paunch, the reticulum, and the maniplus.

Le Zooïatre du Midi, Fevrier 1838.

[To be continued.]

We here present our readers with a portion of one of the most valuable papers that has ever appeared in our Journal, on account of the accuracy of the anatomical facts which it contains, the intelligible manner in which they are detailed, and the physiological and pathological inferences which must already present themselves to the mind of every competent reader, and which M. Gellé will hereafter more fully unfold. To ourselves, who first ventured to direct the attention of the veterinary student to the true character and functions of the organic nerves as distinct from those of the cerebral, and of the organic motor nerves, as distinguished from those which are connected with secretion and

nutrition, the perusal of the last paragraph was highly gratifying.

This paper is peculiarly valuable at the present moment, when we are about to commence, at our chief school, the study of a neglected and most important branch of veterinary instruction. We almost envy him whose duty it will be judiciously and satisfactorily to unfold this noble, but undervalued, portion of anatomical and physiological science. Y.

ON EPIZOOTIC INFLAMMATION OF THE LIVER IN DOGS.

By F. A. Becker, *Veterinary Surgeon to the Eighth Regiment. Prussian Service.*

Inflammation of the liver, as it usually appears in our domesticated animals, is well described in several good veterinary manuals; an epizootic inflammation of the liver in dogs has, however, been hitherto little known: it will not, therefore, prove uninteresting if I offer a few observations on the symptoms of the disease, and the mode of treatment.

Epizootic inflammation of the liver is a disease which most frequently attacks dogs in southerly climates, and particularly in those where there are sudden alternations from damp and cold to heat. It generally appears as a creeping venous inflammation, because the liver is itself the real organ for venous blood. It afterwards easily takes on a typhoïd character; and then, either from some existing predisposition or outward cause, such as weather, air, climate, situation, &c., appears as an epizootic or enzootic.

Diagnosis.—This disease appears in a very insidious manner, and attacks dogs of every breed and every age, and particularly those which are over-fed. According to the observations which I had the opportunity of making, from April to August 1836, in Luxemburg, where in the valley is an oppressive sultry damp temperature, and on the hills a cold penetrating wind and chilling draughts of air, in the first appearance of the disease, before it is united with any other, and only exists as jaundice or gall-fever, it is to be recognized by the following characters:—faintness, sleepiness, dryness of the nose without great heat, matted and dull coat, failing appetite, running eyes, trifling fever, the pulse slightly accelerated, the conjunctiva and sclerotica of a yellow colour, the mucous membrane of the mouth and the inner surface of the conch of the ear pale, and the urine yellow. On the sixth or eighth day all these appearances are more decided. The yellow hue becomes more intense, and particularly on the

cuticle, the conjunctiva, the iris, the gums, the lips, and, finally, it is visible over the whole body, even when that is covered with dark hair. The fever becomes more and more perceptible, there are alternations of cold and heat, and, during the paroxysms of the fever, the pulse is from one hundred and twenty to one hundred and thirty, the breathings eighty, and the dry tongue of the animal hangs from his mouth just as it would if he had been running quickly and long in the heat. The warmth of the body is increased, the hair becomes yet more rough and dull, there is no appetite, the nose and mouth are hot and dry, the animal appears very thirsty and seems particularly to desire cold clear water, the beating of the heart is perceptibly heard, the expired air is very hot, and the breathing laborious. The dog becomes restless, seeks to hide himself, and, if the parts in the neighbourhood of the liver are pressed upon, he groans with pain. In a few hours the paroxysm of fever goes off, the breathing becomes deeper, more regular, assumes the natural state, and the pulse diminishes in like manner.

In the typhoïd variety of the fever the paroxysm usually continues about two days, during which time the animals are tolerably calm, come from their hiding-places, and move about and bark a little, but evidently very faintly and painfully.

From this to the eighth or tenth day there are frequent vomitings, which are slimy, and evidently contain gall. The animal becomes visibly thinner, he obstinately refuses all food, and only manifests thirst; his hind parts begin to totter; he withdraws himself from observation, and anxiously seeks some dark place where he may lay himself down with his belly flat on the cool ground, his fore legs stretched before him and the others behind him, and, if any one touches his belly, he shews great pain. The fever becomes uninterrupted; the cuticle appears often of a dark black yellow; the mucous membrane of the mouth and the conjunctiva of a dirty red; the expired air is evidently hot, the gaze anxious, the excrement either hardened or thin and of a yellow brown, the urine saffron-yellow, or darker: in short, there now appears every symptom of inflammation of the liver.

As this new and dangerous disease proceeds, the animal begins to vomit masses of a yellowish green substance, and, lastly, lumps of a brownish green hue together with blood are thrown up. The animal wastes away to a skeleton; he totters in his walk; his head hangs down; he appears unconscious; convulsions come on; the pulse becomes weak and interrupted; the temperature sinks; and death ensues.

In the cases where, in consequence of the sudden operation of some external cause, such as giving the animal a cold by

throwing him into water, inflammation of the stomach and the liver appear together, and the symptoms of both diseases are visible, as yellowness of the integument and mucous membrane, retching or real vomiting, loss of appetite, fever, costiveness, or diarrhœa, and the discharge of a dark yellow urine, &c. The disease runs its course in from twelve to twenty-four hours after its first attack, or the animal is often dead in from four to six days.

Delaguette says, "that dogs suffering under inflammation of the stomach have always a disposition to bite men or animals, and that the disease may often be discovered by noticing this." I have never remarked this. That the diseased dog would doubtless bite another who attempted to take his food from him, I will not deny; and so would any other dog: he might also threaten to bite the veterinary surgeon whom he did not know, and whose examination of him might give him pain.

Rabies, which has often been confounded with this disease, may be easily distinguished from it by the following symptoms: disposition to bite—the swallowing of inproper and indigestible bodies—and particularly by palsy of the lower jaw, and the peculiar bark. If a dog shews a disposition to eat small chalky or sandy stones, and grass and flowers, it may not be on account of disease, and is easily to be distinguished from the unconscious swallowing of foreign bodies observable in mad dogs.

Duration, Course, and Conclusion.—The duration and course of these diseases are deceptive, since they proceed so insidiously that they have usually existed for six or eight days before the owner of the animal perceives any marks of disease or seeks any aid. By this time an acute disease of the liver has taken place; then comes retching or vomiting, and, shortly afterwards, inflammation of the stomach, which is followed in about three days by death. The duration of these diseases is, in general, about fourteen days.

The disease terminates in congestion of blood in the liver, or gradual restoration to health. This latter can only take place in cases where the inflammation has proceeded very slowly—where the disease could be discovered by debility, slight yellowness of the skin, and fever—and where speedy recourse has been had to medical aid.

Causes.—The predisposing causes of the disease are often difficult to discover. That the dog in warm climates has, on account of his large liver and choleric temperament, a natural disposition to take on these diseases, is well known. As exciting causes may be reckoned atmospheric influence in connexion with local circumstances, sultry days, and cold nights, damp weather, thun-

der storms, &c. all of which contribute to the production of these diseases. Other occasional causes may be found in violent falls, bruises, over-feeding. Fat petted dogs, which are easily overheated by the least exertion, and then place themselves in some draught, take cold, and are attacked by this disease. Lastly, it should be mentioned, that these diseases are very much increased by fright or terror.

Prognosis.—This depends entirely on the duration, course, and complication of the disease. If the malady was attended to when it first appeared, then it can generally be cured. If it has existed for several days, and taken on a typhoïd character—if the yellow hue is perceptible—the appetite failing, and vomitings coming on—then the cure is very doubtful: and if inflammation of the stomach has taken place, with high fever, vomiting of blood, wasting away, and nervous fits, there is no chance of cure. In general these diseases admit of little hope of cure, since they rapidly becomes complicated, and the inflammation of the stomach, which is associated with it, quickly leads to death.

Treatment.—The treatment must always bear reference to the state of the disease; for instance, a simply jaundiced state requires a very different mode of treatment from that required by a higher state of inflammation of the liver, or when this latter is conjoined with inflammation of the stomach. In the first case, namely, when merely the symptoms of jaundice are visible, a moderate laxative of sulphate of magnesia and tartaric acid, in conjunction with some aromatic and mucilaginous fluid, or, quite in the beginning of the disease, an emetic of tartrate of antimony, will be found to be of great service.

But, when the yellow colour has become more intense, the animal will no longer eat, and the fever and weakness are increased, it then becomes necessary to give calomel, emetic tartar, camphor, and calomel with opium, with mucilaginous and narcotic medicines, gum arabic, marsh-mallows, valerian, belladonna, digitalis, &c. in the form of pills; and to rub strong liniments on the skin over the situation of the liver. The greatest care is necessary in prescribing some of these remedies, since small doses of calomel and emetic tartar will frequently produce dreadful vomitings.

Very excellent effects result in some cases from calomel given with opium, or kali tartaricum, or kali nitricum; alkaline drinks are also recommended. The free evacuation of the bowels must not be neglected.

As soon as inflammation of the stomach appears, mucilaginous fluids only must be given. Bleeding is said to be of great service in the commencement of inflammation of the stomach, but

I have never attempted it, as the state of the animal and the character of the disease I have been treating have never seemed to admit of it. Irritating frictions for the skin may be tried, although there is little or no hope of cure.

With regard to general treatment, the animal should be kept from all draughts, and in a moderate and not too warm temperature; his food should be chiefly composed of mucilaginous substances, and his drink should be acidulated.

Post-mortem Examination.—The whole exterior of the body shews great emaciation. The skin, particularly on those parts which are white and without much hair, is of a dark yellow colour; the mucous membrane is pale yellow or dirty. When the skin is raised, its vessels appear to be filled with black thick venous blood; the cellular tissue is yellow, and the muscles very pale.

In the abdomen there is a very perceptible yellow shade over the fatty mesentery and caul, and all the intestines, and on the peritoneum, and particularly on that portion of it nearest to the liver. On the outer covering of the liver are seen, in one or more places, bright yellow or darker spots where the inflammation has produced an exudation of a lymphatic watery bloody matter; and these places are softer, and not so resisting to the touch, as the remaining unaffected brown red parts.

The gall-bladder contains a greenish brown fluid, which sometimes is so consistent that it might be cut with a knife. In the stomach is occasionally found a considerable effusion of blood and general inflammation.

The other organs of the abdomen and chest seldom differ from their normal state.

Magazin für die gesammte Thierheilkunde, 1838, *page* 311.

We select this essay as affording a curious example of the different diseases, and the different characters of the same disease, in different countries. Acute inflammation of the liver is a rare malady in our country. As an epizootic, we have never observed it, except as connected with distemper, and that more in the greyhound than any other species of dogs, and in the great majority of cases proving fatal. Then it does assume a truly epidemic character; for if one case of it is seen, we may safely calculate on many following. When unconnected with distemper it is also a most fatal disease, and will yield only to bleeding, blistering, and purgative medicine, consisting of aloes with a small quantity of calomel.

Chronic inflammation of the liver is a much more frequent disease. It is one of the curses of the petted dog. This

viscus becomes enlarged, hepatized, tuberculated, and the foundation is laid for ascites.

It is curious and useful to compare the different accounts of the same disease in various localities, and the opinions adopted and the treatment recommended by various practitioners.

Y.

THE INTRODUCTION OF AN IRON SKEWER INTO THE STOMACH OF A DOG.

By M. Visamonde, *of Narbonne.*

A pointer dog, three years old, entered his master's kitchen, and, approaching the chimney, swallowed an iron skewer to which some meat was attached that was then roasting before the fire. The owner, uneasy as to the consequences which would result from the almost inevitable perforation of either the stomach or intestines, closely watched the animal. During the whole of that day he was full of spirits, and ate and drank as usual. Two days after the accident the dog accompanied him on a shooting expedition, and he then seemed to exhibit unequivocal signs of pain, but only when he was going down hill.

On the following day, Feb. 13, 1836, the pain was evident, and very intense. The animal frequently stopped, and howled, looking piteously at his flanks and belly. His appetite and courage now began to fail him.

On the 14th an enlargement half as large as a man's thumb was visible on the anterior part of the abdomen, immediately behind the xiphoïd cartilage, and emollient applications were made to the part. During the succeeding night the swelling very much increased, and, on laying hold of the dog for the purpose of examining him, the owner was surprised to see the sharp point of the skewer protruding from the centre of the tumour. An incision was made through the skin, and the iron readily withdrawn.

A little attention was paid to his feeding: he was kept on broth and milk—some mucilaginous injections were administered—the wound was washed twice in the day with a little warm wine—and in a very few days a perfect cure was accomplished.

It was not until the meat by which the skewer was surrounded had been digested that the skewer could pass through the pyloric orifice of the stomach, or penetrate through its tunics, and

the peritoneum and the walls of the abdomen, urged on, as it evidently was, by a mysterious but salutary power. As it passed on, the tissues which it was piercing immediately closed. The eliminatory power which was at work to effect all this, and which to very different substances, and even to collections of fluid, giving this power of travelling on safely and unerringly towards the surface, is a very curious and interesting subject of consideration.

Le Zooïatre du Midi, Janvier 1838.

CASE OF AN OPENING BETWEEN THE RECTUM AND THE VAGINA IN A MARE.

By M. G. W. Schrader, *V.S., Hamburg.*

On the 7th of May 1837, I was requested by Herr S. to come and examine a six-year-old mare, which he had bought a few days before; for he had remarked that, although she was otherwise perfectly well, yet, when she urined, balls of dung came away at the same time. On the following morning I attended at his stable. Having oiled my hand, I passed it into the rectum, and, having cleared away first all the dung which was collected within it, I followed the direction of this intestine as far as my arm could reach, and found nothing amiss, until, on drawing out my arm, and my fingers being directed downwards, and about a hand's breadth from the sphincter, I came to an opening which led in a sloping direction from the rectum to the superior portion of the vagina. I then examined the vagina, and succeeded without the least difficulty in passing my finger from it into the rectum. This opening was about an inch in diameter, but could easily be distended; the edges of it were even and smooth, and the animal did not appear to feel any pain when it was touched.

This mare had, it appears, foaled once, and, most probably, the foal was badly situated; and, either by straining or exertion, or some violent treatment, this rent was occasioned.

The reason why no greater quantity of dung passed through the vagina is thus explained, that, by the pressure of the dung, this opening closed itself like a kind of valve; and it is only in the course of a long delay of the dung by the sphincter, that a few balls were pushed through the valve, and discharged with the urine. The flatus, on the contrary, always passed out through the vagina, because the sphincter gave greater resistance to it than the artificial opening did.

Magazin für die gesammte Thierheilkunde, 1837, p. 261.

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ON THE EFFECT OF NITROUS ACID IN GLANDERS.

By Mr. W. Percivall, *V.S.* 1*st Life Guards.*

[We found this paper, a few days ago, in a box that we had not examined for many a year. It is a valuable one, from the extent and importance of the experiments which it records, and we hasten to insert it.—Y.]

IN consequence of the reputation obtained in former days for nitrous acid as a remedy for venereal affections, the writer of this became induced to make trial of its powers in glanders. He anticipated some inconveniences in the exhibition of it, which led him to hesitate in what form he should give it. He first administered it in the form of drink, as follows:—

℞ Nitrous acid, half an ounce,
— Water (distilled) one pint,
— Treacle, one ounce; mix,

and he administered this drink twice a-day. On the fourth day, however, the mouth and throat were rendered so sore, that the medicine could no longer be continued.

Subsequently it was resolved to endeavour to pack the acid up into the form of a ball, and thus to administer it without any such ill consequences. After several experiments the subjoined formula was found to answer the purpose, providing the balls were administered shortly after being made up; for, if they were kept any length of time, they became hot, swollen, and puffed up, and ultimately burst and broke into fragments:—

℞ Nitrous acid, half an ounce,
— Hogs' lard and linseed meal sufficient to form a ball;

which was exhibited every morning, and repeated every evening.

In this form the acid was administered for many weeks to several glandered horses. It had, however, no apparent effect on the malady; nor, indeed, was there noted any particular impres-

sion that it had on the system at large, or any of the organic functions. After death there were, once or twice, found eschars on the cuticular portion of the stomach, denoting the place where the ball had lain stationary for some time prior to the general diffusion of its contents among the chymous mass.

THE USE OF BELLADONNA IN TETANUS.

By Mr. H. Hutchinson, *Wragby, Lincolnshire.*

April 20*th,* 1838.—I was sent for to see a bay filly, three years old, that had received an injury on the outside of the hock six weeks before, and from which she seemed to suffer very great pain. She had likewise been docked about three weeks before my visit. On my arrival my attention was directed to the hock, but I found her labouring under all the symptoms of tetanus. Her pulse was 40, and her respiration much accelerated. I immediately acquainted the owner with the real nature of her disease. I then gave her ten drachms of aloes in solution, with four drachms of the extract of belladonna. I also blistered the whole length of the spine, and gave an ounce and a half of tincture of opium in some gruel as an enema. This was about noon.

7 o'clock p.m.—The pulse 48. I administered twenty drops of croton oil by placing it on her tongue, and repeated the enema.

21*st,* 9 a.m.—Pulse 50. Repeat the croton oil and the enema. The symptoms were more strongly developed, the jaws were more firmly set, and the tail quivering. The blister had produced no effect, therefore I applied a kind of cautery. I took a large piece of iron, heated, and drew it slowly backwards and forwards over the spine, at a little distance from it.

4 p.m.—No better. Repeat the enema, and give four drachms of the extract of belladonna.

8 p.m.—Pulse 60. Give twelve drachms of aloes in solution.

22*d,* 9 a.m.—The pulse still 60. I applied a strong mustard liniment along the spine. The mouth and tongue were very much swollen, both of them having been excoriated by the croton oil. Continue the belladonna, but otherwise let her alone.

23*d.*—I do really fancy that there is a slight amendment in my patient. The muscles do not feel so unnaturally hard and corded. The whole course of the spine is exceedingly hot.

24*th to May* 5*th.*—The belladonna has been continued with occasional purgatives; and, at the last date, she could move her

jaws with tolerable freedom. It was not, however, until several days after this that she could stoop sufficiently to graze in the pasture.

Her medicine, as well as her food, I gave by means of a bladder attached to a human enema tube. I attribute the successful termination of the case to the use of the extract of belladonna; for, soon after the first dose was administered, she began to be composed, and gradually improved. She was evidently under the influence of the belladonna, for the pupil was very much dilated. When I began to feel that she was safe, I lessened the dose of the narcotic, and to-day have ordered it to be left off.

Do you attribute the tetanic attack to the injury of the hock, or to the docking? This is, to me, a rather interesting inquiry.

[This is another welcome testimony to the efficacy of belladonna in tetanus. It has not been administered with unvaried success by any one, and in no age of after-improvement will that medicine or mode of treatment be discovered to which this fearful disease will always yield. With regard to the principle of our treatment there cannot be a moment's doubt,—*we must tranquillize the system.* We may, to a certain degree, effect this by early and copious bleeding: we have a valuable, an indispensable auxiliary in purgatives; but we look to the list of sedative medicines for our most powerful weapon. There are very few of us who have not experienced the beneficial effect of opium, and many a horse has been rescued from destruction by it; but it does not exert its full influence on some, and its power becomes diminished by the continued use of it in others. We want another drug, of similar and of equal power, that we may alternate with it, or mingle with it, or use instead of it. Some practitioners think that they have this in belladonna. We give no definite opinion at present; but certain it is that it has been eminently successful in some cases that have been lately recorded in THE VETERINARIAN, and that it here did all that Mr. Hutchinson could have wished.

As to the question which Mr. Hutchinson asks, whether the injury of the hock or the docking was the cause of this tetanic attack, we really are unable to give any satisfactory answer. A serious injury of the hock might have laid the foundation for tetanus, but we have never known such a case. We have known many a case of tetanus following docking, and therefore we should look to this as the more probable cause. It is possible, however, that both may have been concerned.—Y.]

A CASE OF AMPUTATION OF THE PENIS.

By Mr. C. Snewing, *Coventry.*

My patient was an aged pony, and which had been purchased by its present owner about ten days prior to my operating upon him. On the journey home, and while the animal was in the act of voiding its urine, he was seen, as was supposed, to project or *draw* his penis. No notice, however, was taken of the circumstance until the owner next alighted, when he perceived the penis still down and bloody, and, upon examination, the marks of stitches were visible in the tegumental plications formed by the extreme vaginal involutions, rendering it evident that means had been taken to brace up for a time the pendant organ, which, from some unknown cause, had become debilitated.

The owner, vexed at the trick that had been played upon him, at first determined to leave the poor animal to its fate, or, in other words, to let him take his chance, and he turned him into one of his fields: but the disgusting appearance which the animal presented, and the powerful feelings of humanity, afterwards induced him to send for the knacker, in order to dispatch this suffering brute. The knacker, who deserves much praise for his disinterestedness, persuaded the owner, ere *he* played his part, to have some medical advice. In compliance with the wishes of some friends I was sent for on September 15th, and speedily ushered into the presence of the poor emaciated creature, from the posterior part of whose abdomen hung, to use the owner's words, "a mass of corruption," which on examination proved to be a portion of the penis in a state of ulceration, or rather gone on to gangrene. There was a discharge of thin watery sanious fluid, with blood, and highly offensive; and there was also present what may be considered *paraphymosis*, arising from serous infiltration into the cellular tissue which connects together the convolutions of the vagina or sheath, producing strangury of the lower end of the penis.

As far as the hand and eye could direct and assist me, I concluded that nothing but amputation, close up to the groin, could offer any chance of relief. Accordingly I proceeded to operate, having first washed the parts with a solution of chloride of lime, in order to destroy the offensive fœtor. I next placed a compress, made of two long thin pieces of iron, round the upper part of it, and adjusted them so as to produce an equal pressure upon the penis and teguments, by the corresponding ends being brought into apposition by means of strings, acting on the

same principle as the caustic clams. I next proceeded cautiously to incise the lower portion, securing by ligature in my progress the pudic arteries, and the other vessels of importance*. Near to the side of the penis I met with an encysted tumour, containing some thick crude offensive matter: on cutting through the urethra, a purulent secretion escaped; another cut carried my scalpel through the penis, which, by its retraction, prevented me from securing a vessel on its dorsum, and which continued to bleed rather freely for a few minutes, partly, I presume, from the corpora cavernosa. Having completed the operation, and released the animal from the rope, he got up immediately. I had him led into the stable, and, though the parts then bled freely, in ten minutes the hemorrhage ceased, and no untoward symptom afterwards made its appearance.

My after treatment consisted in keeping him for a few days on a low diet, giving a mild dose of physic, washing the parts every day with a tepid solution of chloride of lime, and dressing afterwards with turpentine ointment and compound tincture of myrrh.

Part of the glans penis appeared gone, and the remainder scarcely discernible from the other portions of the penis, the external part of which, as well as the apposing part of the sheath, were covered with ulcerations, while many little abscesses were found between the layers of the tegumental covering.

I have now the gratification to say that the pony is perfectly recovered, and voids his urine with ease.

The portion excised weighed upwards of five pounds, and, upon dissecting it afterwards, I discovered that the inner surface of the urethra, from the place of excision downwards to its termination in the glans penis, was in a complete state of suppuration and ulceration, which had produced an artificial opening about four inches from the end of the penis, below which there was no passage, nor scarcely a vestige left of the existence of any canal.

* It being asked me how long the ligatures would be before they came away, I subjoin the following observations:—In the present case the time they stayed on was eleven days; and having the misfortune some time ago to wound one of the plantar arteries with the point of my knife in performing the operation of neurotomy, I observed that the ligatures were thirteen or fourteen days before they could be detached from the wound.

A CASE OF RABIES.

By Mr. W. C. Spooner, *Southampton.*

March 30, 1838.—I was requested to examine a very valuable dog that had been bitten by another supposed to be rabid two days previously. The only bite that could be discovered on a minute examination was one on the ear, to which the lunar caustic was very freely applied. As the dog was so valuable, and so great a favourite, the owner did not wish to have him destroyed, and yet was, of course, unwilling to run any risk. Under these circumstances I advised him to have the animal confined for six months. My advice was taken, the dog was confined, every attention paid him, and the wound in the ear cauterized a second time. The dog continued well until August 27th, when he appeared indisposed: in a short time the symptoms of rabies were developed, and in the course of six days he died decidedly mad.

[This occasional long period of incubation is one of the most fearful circumstances connected with rabies. Mr. Spooner, in a private letter to the Editor, assures us that the dog was securely confined during his quarantine, and that he was just about to be liberated when the disease became manifested. Three days more than twenty-one weeks here elapsed. We had one case in which rather more than seven months passed away before the symptoms of rabies began to exhibit themselves. These are rare cases; but they have occurred, and may do so again. Neither the practitioner nor his employer have always given this the serious consideration which it deserves.—Y.]

ON THE ACCUMULATION OF DIGITALIS IN THE SYSTEM.

By Mr. W. J. T. Morton, *Royal Veterinary College, London.*

Digitalis or foxglove is an agent now pretty generally employed by veterinarians, and that with considerable advantage, in cases of pleuritis, pneumonitis, carditis, and other active inflammations, after the lancet has been resorted to, and as much blood detracted from the mass as the patient's strength and other circumstances will permit. It has also been found useful in chronic coughs, thick wind, &c., when by its sedative influ-

ence on the nerves of respiration it affords much relief. My intention, however, is not to speak of the general action of this drug, but its particular and occasional one. This I shall do by putting a question, and following it up by an answer; hoping thus to induce others to give the result of their experience.

Does not digitalis occasionally accumulate in the system, and, by so doing, cause effects that are both unexpected and different from those ordinarily induced by it?

I am compelled, from having a little carefully watched the effects of this drug, to reply in the affirmative. If this be correct, it only affords another proof of the necessity of circumspection in the employment of remedies; for a medicament may be never so valuable, and yet, where a want of judgment is, it may prove injurious: but who on that account would condemn and discard it?

Medicines are at best but relative agents, their effects depending in a great measure upon the state of the body, condition, &c. of the patient. Disease, if it does not originate and determine, at least modifies their action; and it is only when the "harp of a thousand strings" is untuned—when seemingly a displacement of some of the wheels of the complex machine has taken place—that they can be said to be of real use. Experiments with them at other times often lead us astray, and our deductions are frequently incorrect; they should, therefore, be accepted with caution. They may serve as guides, but certainly they do not merit our implicit confidence.

Among the more common indications of this derangement in function is a disinclination for food. Hence it is, that this, which is a general attendant on digitalis after it has been given in repeated doses, is often passed by unnoticed; and the heart's action not being yet perceptibly under its control, another and perhaps another dose of the medicine is administered; when, all at once, we have produced a quick and an irritable pulse, accompanied with considerable depression of the vital energies, and followed by a relaxed state of the bowels: or, when the quantity given has been large, a state of nausea supervenes, with its concomitants, loathing of food, the head depressed, increased secretion of saliva, and chilliness of the surface of the body. The pulse is feeble and tremulous, and suddenly falls to, sometimes, even below the natural standard, the lining membrane of the nostrils having a blanched hue. These symptoms generally disappear with a softening of the fæces, by which means I opine the agent is expelled; at least, these are the results I have more commonly witnessed.

In inordinate doses, digitalis appears with one fell sweep to

palsy the heart, and render life extinct, without any injection of the membranes or lesion of the tissues being recognized. The diuretic influence of this agent I do not think is constantly and invariably shewn; but a power of reducing the pulse, both in frequency and force, is the true characteristic of this valuable and important therapeutic. Of all its forms of exhibition, the carefully collected and well-dried and preserved leaf, powdered, is the best for veterinary practice. Its activity, however, is readily extracted by proof spirit.

THE GOOD EFFECT OF IODINE IN GLANDERS.

By Mr. Henry Freake, *Northampton.*

A valuable cart-horse, eight years old, the property of Mr. Hindmarsh, a rail-road contractor, was noticed by his attendant to have a slight cough accompanied by a discharge from both nostrils. A farrier in the neighbourhood was applied to, who was of opinion that it might easily be removed, as it seemed to be merely common catarrh. He was consequently requested to pay every necessary attention, which he continued to do for some time without any benefit resulting, but, on the contrary, the horse became rapidly attenuated and weak, and his appetite was much impaired.

March 8th, 1838.—My attendance was requested by the proprietor. The symptoms were decidedly characteristic of glanders, and they presented themselves in the following manner: The Schneiderian membrane on both sides of the septum nasi was ulcerated; the submaxillary lymphatics enlarged, particularly that on the left side, which was closely adherent to the jawbone; there was also a considerable discharge of viscid sanies from the nostrils, tinged with blood, and highly offensive.

Feeling convinced from the above symptoms that this was a confirmed case, I resolved upon trying the efficacy of iodine, having heard so much in favour of this medicament in this disease. I gave two drachms of tincture of iodine, and eight ounces of infusion of calumba, three times a-day, and prepared a solution of creosote, which was occasionally injected up the nostrils. The horse was placed in a well-ventilated stable with a sufficient supply of nutritious food.

This treatment was continued until the 23d, without any apparent alteration. I now increased the dose to ʒiii of the tincture.

This was continued for a fortnight, occasionally using the injection, when I perceived that a decided change had taken place. The discharge had decreased, the ulcers exhibited a more healthy aspect, the submaxillary lymphatics lessened, and the appetite and condition materially improved.

April 15*th.*—I gave of tincture of iodine ʒiiiss in combination with the infusion of calumba, which was punctually administered three times a day until the 29th of April, when every unfavourable symptom had disappeared, and I might say that no abnormal appearance remained. The horse has been at work some time without the slightest symptom of a return of this formidable malady.

As I have now two glandered horses under my care, I intend to institute a course of experiments, and ascertain the medicinal properties of this agent to its full extent; the result of which shall, with your permission, appear in THE VETERINARIAN at some future period.

THE SUCCESSFUL ADMINISTRATION OF HEMLOCK IN TETANUS.

By the same.

Sept. 3*d,* 1838.—HAVING occasion to examine some lame horses at grass, the property of Mr. Higgins, an extensive coach proprietor in Northampton, my attention was directed to a mare that appeared to have an unusual straddling gait. Upon inquiry, I found that she had been in this state three or four days, but could gain no further information than that she had been at work in a thrashing-machine, and was turned out while in a state of perspiration.

She was removed to a stable with considerable difficulty. It was evident that she was labouring under tetanus. The jaws were fixed, the nostrils dilated, the membrana nictitans protruded, the muscles of the neck rigid, a great difficulty was experienced in turning round, and the least noise produced much nervous irritation. The feces voided during the day were of a very hard consistence.

I abstracted fourteen pounds of blood, and administered an enema containing tincture of opium. I gave two drachms of opium in solution, and twenty drops of croton oil, with a plentiful supply of gruel, orders being left that she should be kept quiet.

5th.—The symptoms were much the same—the bowels not yet acted upon. Apply a blister along the whole extent of the

spine, after which let the skin of a sheep recently killed be placed along the back. Repeat the medicine, which I endeavoured to get down by means of a tube, and continue the injections.

7th.—The medicine has slightly operated: the symptoms are unaltered. Repeat blister, and give extr. conii ʒii in solution, ol. croton gtt. xv, and repeat injections.

10th.—There has been a gradual change for the better: the feces are discharged in a semi-fluid state, and the rigidness of the muscles much relaxed, as were also the jaws. I continued this treatment, moderating the quantity of the hemlock according to circumstances, until the 17th, when I found any further medical treatment unnecessary. She is now at work, and much improved in condition.

ON DRENCHING THE HORSE.

By Mr. W. C. Markham, *London.*

As a sincere admirer of veterinary science, I could not but feel sorry, on reading some remarks by Professor Stewart, respecting the drenching of horses. He gives us some good advice respecting the manner of holding a horse's head while administering a drink, and the disposition of the mouth-strap, and the position of the assistant, and the humouring of the horse when an unpleasant drink is given; and he then concludes, to my astonishment and dismay, with strongly recommending that all drenches should be given with glass bottles. To be sure, he guards himself against the first and palpable objection to this instrument; for he tells the wight engaged in the administration of the drench, "Keep it away from the teeth. You are not a good operator if you let it be crushed between them."

Now, Mr. Editor, in nine cases out of ten, the giving of drenches is not performed by the veterinary surgeon or his assistant, but the drench is sent by some inferior servant, either to be administered by him, or, perhaps, by the ostler or the groom. I once saw a horse's mouth dreadfully cut by the giving a drink from a glass bottle. I confess that the form of the bottle is very convenient; but why not have these bottles made of strong block-tin? Any tinman could make them, and make them to any size, as a pint, a pint and a half, or two pints. I have used such for the last nine years with complete satisfaction. Such a bottle is, indeed, far "better than a horn."

A little afterwards, Professor Stewart tells us, "Now, you are never to give a draught to any horse unless you think he will

die without it." It is the fear of death that is to make us fly to the aid of medicine thus administered. Now suppose that I found my horse labouring under the effects of spasmodic colic,—even if I did not think that he would die, but that I could relieve him of a considerable portion of his pain, would I not immediately give him a drink?

Again, we are told that the safest way of giving a draught, is to administer it when the horse is lying, as he mostly always is in the cases which imperiously demand a draught. Now, Mr. Editor, I am sorry for this; for the time is arrived when the whole agricultural portion of the country is looking up to the veterinary profession, and watching its every movement, while the amalgamation between veterinary and agricultural science is effecting. I say, I am sorry to read this, and that these unprofessionable people should be led to suppose, that one and another most valuable animal that refused his food, and was heaving at the flanks, and pawing the ground last night, was not thought to be dangerously ill, and consequently little was done to him, because he did not lie down. Perhaps the veterinary surgeon was not sent for, for this very sapient reason, although it was evident to him who had but half an eye that the horse was ill, seriously ill. I have for many years had the management of several hundred horses, and know from practical experience the sad consequences of losing time in cases like these; therefore, I entreat all who may chance to read this, or who are in any way connected with horses, not to be deluded by this strange and erroneous statement, but, the moment they are satisfied that a horse is ill, to send for the medical man, although the patient may be standing, and obstinately standing.

To what practical veterinary surgeon is it not known, that in many of the most dangerous diseases to which the horse is subject, such as pneumonia, pleuritis, and bronchitis, in fact, in all affections of the chest and bronchi, the horse stands, and will stand in spite of us? In fact, he will not lie down at all until he is either in the agonies of death, or is so much recovered as not to require any medicine.

Professor Stewart then cites twelve cases as proofs of the danger of giving drinks.

"Case I.—A horse had three drinks administered to him: he coughed after the last of them, and subsequently shewed symptoms of bronchitis, for which he was treated. He ultimately recovered: but was broken-winded.

"Case II.—A draught mare, was drenched—she coughed *once*. Next day she had bronchitis, but *received little attention*. She died on the ninth or tenth day.

"Case III.—A horse got a draught, and died—mind!—*without treatment*, on the fourth day: his breathing was very quick from beginning to end.

"Case IV.—Another horse got a draught, coughed violently, received *no* treatment but one bleeding, and died on the *sixteenth* day.

"Case V.—A horse got a draught. Next day he had bronchitis. He was put under treatment. He did not lie down until the nineteenth day, but his recovery was perfect."

I will not trouble your readers with a history of the other cases: I will take these as, what I believe them to be, a fair sample of the whole.

Now, what has the Professor proved by these cases? Certainly, not that the drinks destroyed these horses; but he has proved that the first and last quoted cases were put under proper treatment, and both recovered; and that the other cases, namely, the second, third, and fourth, were most shamefully and cruelly neglected, and *in consequence* of that cruel neglect, they all died. But what has this to do with drenching?

I had been anxiously waiting for the October number of your Journal, hoping that some one more competent than myself would have taken notice of Mr. Stewart's letter; but as no one has done so, may I, as an humble individual, venture to hope, that you may be able to find room in your valuable Journal for these remarks? I do assure you, that I have but one motive in coming forward, and that is the lively interest I feel in the onward progress of veterinary science.

LETTERS TO A STUDENT.

By Professor Stewart, *Glasgow.*

No. V.—About Drenches.

Notice has been given to me that my last letter was worse than ordinary; that it was deficient in details; that, in some places it was obscure, in some erroneous, in others impertinent; that such an exhibition of accidents implied bad practice; that there must be a screw loose, something fundamentally wrong, and so forth.

I crave leave to think that I am not over-well used. The last letter, in my opinion, was as good as any of the others. The details, I admit, were not minute. The nature and date of the illness, the age, sex, colour, and proprietor of the patient were not

specified; but that was because I had no intention, and I have none yet, of saying any thing about these matters. The obscurity, the error, and the impertinence I cannot explain; and as for the insinuations about loose screws, I can only say, that I do not feel particularly grateful to any man who makes them. I trust I may think it far from friendly.

The cases I mentioned did not all occur in my own practice. I was sometimes called, not to give a draught, but to treat that which a draught had produced. Nevertheless, if it be important that I should be regarded as the author of all the evil, let it be so. I am content to rest my defence upon the impossibility of giving a couple of pungent or disagreeable draughts to each of two hundred horses without producing bronchitis in seven or eight of them. I affirm that no man can do this, take what care he will. If there be any body to say that he has done it; that he has given four hundred draughts to horses, and never produced bronchitis, he will do the profession a service to let us know how he has managed it. Or if there be any one who *even thinks*, and says that he *can* do it, he may let us hear him say so before the public. There can be no reasonable objections to that. Though he only imagines what he could do, he must have cause for his imaginations; and perchance his opinion, though a mere opinion, may do us some good.

But to go about from stable to stable, and from person to person industriously lamenting the ignorance and rashness of some people, and bewailing the disrespect which they bring upon themselves and their brethren, is a paltry trick, worthy only of a skulking coward and a practised liar. If my last letter exhibits any thing deserving special reproof, the proper method is to write a reply, and publish it in the same Journal: and, as the reply would be easily made, requiring no ability, no truth, no virtue of any kind, I entertain hopes that some such thing may yet come to light. But if it should not, I dare say the disappointment will not break my heart. Affected superiority is still at liberty to sneer as knowingly as it can, and canting hypocrisy to whisper its hints for the good of the public; only when people laugh at them and despise them, they need not say *that* is my fault.

Now for the treatment of accidental bronchitis. You are not to suppose that your patient is in no danger because he does not cough and quicken his breathing after a draught; for he may shew no sign of the accident until next day. But when a considerable quantity enters the trachea, the horse generally coughs immediately, and sometimes a little runs from his nostrils whenever you let down his head. Upon listening at the point of the sternum you hear the fluid gurgling.

The first thing to be done is to *make* the horse cough. Press the larynx till he coughs repeatedly. If nothing come from the mouth or nostrils, he is in no great danger; he has got so little in the lungs that he may require no treatment. But if much—say three or four ounces of a colic mixture—be coughed up, you must bleed the horse till he staggers. Put him into the nearest stable. He must not travel a mile. Give him fresh and cold air to breathe. Give a gentle laxative, and let him have no food but a very little bran mash and hay. Grass is too good. It is of importance to keep the horse very low and very quiet. If the pulse gets full, hard, and quick, bleed again. Give sedatives and diuretics. Let him have no corn till he has lain down two nights, and no exercise till he has lain down four nights. Let him have tepid water, but no gruel; keep the bowels in order, and bandage the legs. Give very strict orders about diet and ventilation: the groom is very apt to err in regard to both, and an error in either may cost the horse's life. See your patient every day, or oftener, till he begins to lie down.

ON THE USE OF THE LANCET IN BLEEDING THE HORSE.

By Mr. J. Horsburgh, *Dalkeith, N. B.*

I was glad to see in the September Veterinarian an Essay by Mr. Gibson on Bleeding with the Lancet. I had often been thinking of writing myself to you on this subject; and I have frequently recommended its use to those in my neighbourhood, but without effect.

Last week I was at Mr. Dick's establishment, when one of the students had to bleed a horse. He was left-handed, and I stood to see how he came on. After fumbling about it a good while, he hit such a stroke at the fleam that out sprung the blood with a vengeance, and away went the head of a new, clean, varnished beetle—*vulgo*, bloodstick. He stood glowering at the handle in his hand, and wondering where the head had gone, while the bystanders were all laughing; when he exclaimed "I would not have cared but its ——— 's." I advised him never to use the fleam again, and he would never more break his beetle's neck.

The introduction of the lancet was a great improvement; it was more convenient to carry than the fleam and the bloodstick; it had a far more respectable appearance, and the person who was a little used to it could make as large or small an orifice as he pleased. Mr. Dick, however, like Mr. Coleman, recommends the fleam.

For my own part, I have adopted the lancet these five years, and it serves every useful purpose. I had always a dislike to hammering a fleam into a horse's neck with a wooden beetle. I had lost mine one stormy day on the banks of the Tweed, between Inverleithen and Peebles, and found myself somewhat at a loss when I got to the place where my patient was. I, however, tried the edge of my hand, and found it to answer, and never more carried a *beetle*: shortly afterward, however, I began to use the lancet.

I have laid my old friends, the fleams, comfortably by, and never afterwards took them out but when I lent them to a butcher to bleed his calves. They are again deposited as memorials of auld times; and will never more be disturbed unless the butcher wants them for his calves again. The very appearance of the lancet, compared with the fleam and the bloodstick, would make any man that had regard to the respectability of the profession betake himself to the use of it. The lancet is allowed by its opponents to be a more surgical instrument in the hands of a well-taught veterinary practitioner; then let *him* use it. He that cannot use it, let him go back to his school and learn, if they can teach him; and not come out again until he is well-taught, and can bleed with a lancet from every accessible vein. There is no fear that the lancet will not, in the hands of him who is accustomed to its use, pierce at the first thrust as deeply as can be wished. I use a lancet a little stouter than that employed by the human surgeon, straight on one side, and a little curved up at the point; and with this I could make a wound four inches long if I wanted it. It answers every useful purpose, although it has no shoulders or files at the base; and I certainly never lost sight of it, and found it sticking in the horse's neck yet. Many thanks to Mr. Gibson for the introduction of such a subject.

[We must apologize to Mr. Horsburgh for translating the "lowland braid Scotch," in which a great part of his letter was written. His observations, although confined to the comparative value of the lancet and the fleam, are too much connected with the respectability of our profession to need any dress of this kind. One paragraph alone we will give in its vernacular orthography, and none of our readers will take it amiss, although it will come home to not a few of them. "Pardon me, but we'ave haen sic a heap of foreen cases for some time that I thought maist o' our ain kintry-folk were either dead, or some'at waur come o'er 'em."—Y.]

THE RANK AND PAY OF CAVALRY VETERINARY SURGEONS.

The French veterinary cavalry surgeon, in whatever walk of life he may have previously moved, whatever may be his attainments or his length of service, can rank only as a warrant officer. He may be, he is, admitted to the highest scientific institutions of his country; there, at least, his claims are frankly acknowledged; but in his own regiment there is between him and his brother officers a chasm which he can never pass. This is an unnatural and a disgraceful state of things.

The French veterinarian has not rested quietly under this galling state of inferiority; but the French cavalry regiments are, almost without an exception, officered by the noblesse, and a deaf ear has been turned to the claims of common feeling and justice.

M. Hamont, the founder of the Egyptian school, rested not until he had obtained for the certificated pupils of Abou Zabel the rank of commissioned officers as soon as they entered the cavalry service; but the pupils of Alfort, Lyons, and Toulouse, continue to be regarded as subalterns. A state of things so anomalous and so disgraceful cannot much longer remain. The professors of the French schools have made, or are about to make, another decided struggle for the honour and the rights of their profession. We wish them the success which they deserve.

They were naturally anxious to be informed of the rank and pay of the veterinary surgeon in the British service. Our valued friend, Mr. W. Percivall, than whom no one could be more competent or more zealous in such a cause, has sent them the desired information. As every practitioner may not be in full possession of the real position of the veterinary surgeon in our cavalry regiments, and a copy of Mr. Percivall's reply has fallen into our hands, we gladly transcribe it. He is answering certain questions. The veterinary surgeon on his entrance into a cavalry regiment has the rank of cornet or sub-lieutenant. At the end of ten years he has the rank of lieutenant; and of captain at the expiration of twenty years. This is the highest rank at which he can arrive. His pay is eight shillings a day during the first three years, and ten shilling a day during the next seven years; after that twelve shillings a day until he has served twenty years, and then fifteen shillings a day as long as he shall remain in the service. At the expiration of twenty-five years' service he has a right to the retired pay of eight shillings a day, and of twelve shillings a day after thirty years' service.

His widow will have a claim to an annuity in proportion to the rate of pay.

MEMORIAL OF THE FRENCH VETERINARY SURGEONS,

BELONGING TO THE TROOPS ASSEMBLED AT THE CAMP AT COMPIEGNE, TO THE DUKE OF ORLEANS, IN THE AUTUMN OF 1836.

As a matter of veterinary military history, as presenting to the English veterinarian a correct account of the situation of his French brethren, and as a document with almost every word of which we cordially coincide, we present our readers with the following memorial:—

Monseigneur,—THE veterinary surgeons of the corps forming a part of the camp at Compiègne approach you with confidence, to solicit your kind consideration of their present military position, which, in their opinion, is far from being in harmony with the services required of them, and the importance of the *matériel* confided to their care.

Amidst the ameliorations of every kind which have, for a long time, succeeded to each other in the various divisions of the French army, from the progress of military and general science, the veterinary department is the only one which remains in its primitive position; and notwithstanding the veterinarian, like his companions, is a soldier, and in common with them exposed to all the chances of war, he alone is without any prospect of adequate advancement.

Without here enumerating all the important functions which they have to discharge, let it suffice to mention that, in consequence of the inferiority of their rank, they are forced to silence, or at least to a kind of *diplomacy*, in order that the slightest thing which they may counsel for the benefit of the horses may be adopted; and too happy do they think themselves if their advice does not rouse the jealousy of the officers, and, sometimes, even of the sub-officers, who have the superintendence of that in the management of which the veterinary surgeon alone ought to have a voice. A position thus false must, to a very material extent, be destructive of the health and condition of the horse, and thus of the cavalry service; at the same time that in the veterinarian it must, to a certain degree, destroy the love of his art, and extinguish all emulation: for, sure of never being more than a sub-officer, the veterinarian longs for the termination of that military career in which his inclination or his folly had involved him, and in which he can never, without profound regret, resign himself to a stationary and negative position in the army.

Without recapitulating here all the inconveniences and hardships which result from this imperfect organization of the cavalry, we may advert to one fact, which is singularly inconsistent with the habits of our time. When consigned to an hospital, they obtain only the position and the comfort of the common soldier, while they are nevertheless compelled to pay no less than fifty-nine centimes per day more than the captain, and ninety-nine more than the surgeon-major, and, after thirty years' service, their retired pay does not ordinarily exceed more than 400 francs, or a little more than £16 per annum.

We would beg also to remind your Royal Highness, that while, before the creation of the veterinary schools, the farriers-major of the corps held the rank of sub-officer, we remain stationary, after the improvement that has been effected in veterinary science, and are yet only sub-officers. We would also respectfully state, that, while the legislative assembly has again and again taken our claims into consideration, they have been uniformly referred to the minister of war, and there the matter has ended.

Full of confidence in your sense of justice, and your solicitude for the well-being of the army, and after the numerous and influential voices that have been and are daily raised in favour of our cause, we do most respectfully solicit your support, and submit to your consideration the claims which we feel ourselves compelled to urge.

Is it too much, Sir, to ask that, in consideration of the important trust confided to us, we, like the veterinarians of other countries less advanced, perhaps, than ourselves in horse knowledge, should, after ten years' of effective service, and proof of knowledge of our duty, and good conduct, and zeal for the service, hope to obtain, at the recommendation of our colonels, the rank of sub-lieutenant, and that of lieutenant after twenty years' service, if we should continue to merit that advance, and, finally, a retired pay equal to that of the grade to which we may have advanced?

This, and this alone, would indemnify us for the sacrifices which our studies exact from us, and which the progress of medical science has multiplied tenfold. It would also powerfully excite a spirit of emulation among us, which it is always the true interest of the government to maintain in full activity; and, finally, from the adoption of this reorganization of the service, there would arise the warranty, that he alone would obtain this recompense who was deemed by a competent authority to be worthy of it.

We venture to hope, Sir, that how great soever may be the

distance between our actual position and that to which we aspire, your Royal Highness will not see in our prayer any assumption of pretensions too elevated ; and we are assured that you will not, if it is remembered that the boundary of our wishes, if we may so express it, is to obtain that rank which assistant-surgeons possess at their entrance into the service, and that we only ask to finish where they begin.

Receive, Monseigneur, &c. &c.

Recueil 1837, p. 383.

[This far too modest prayer was, like all the others, referred to the minister of war; and in his bureau the petition, probably, remains at the present moment. We trust that the professors of the Alfort School will demand and will obtain higher rank and privileges. It is essential to his respectability and usefulness that the veterinary surgeon, the moment he joins the regiment, should become a commissioned officer, as in the British service. This is necessary to ensure him the proper consideration of those with whom he will be brought into daily contact ; it will be indispensable, in order to enable him to adopt and to carry out those plans of management and of treatment, in sickness and in health, of the propriety of which he, from his education, is the only competent judge, and which are essentially connected with the good of the service. Therefore, we should say to our French brethren, assume higher ground than this memorial takes, and rest not until you are placed in that situation to which your profession and your utility entitle you to aspire.—Y.]

DEATH CAUSED BY ULCERATION OF A BLOODVESSEL IN A TUMOUR ON THE CÆCUM.

From Mr. W. A. Cartwright, *Whitchurch.*

On Sunday the 24th of June 1838, Mr. Blundell, of the Woodhouses, near Whitchurch, sent his servant boy, about 3 o'clock in the morning, to fetch a half-bred mare from the field. He found her grazing, but could not catch her there; he therefore drove her up to the stable, and there gave her some grass, of which she ate a little. Half an hour after she had been brought up, she began to paw and stamp her foot, and soon after lay down, but did not roll over. The owner concluded that she had the colic, and accordingly sent off the boy for a farrier

just by to bleed her, while another person walked her about; but she had scarcely walked twenty yards, before she fell, and died.

On the same day she was opened, and on the cæcum there was a tumour as large as a man's head. It was cut off, and preserved for me to see. The bowel was full of blood.

On the next day I was sent for to examine this tumour. Its structure was of a kind of musculo-cartilaginous nature, and through it there were running several large bloodvessels. Close to one of them an abscess (as large as one could put one's fist into) had formed, and had completely ulcerated through its coats for an inch around, and which abscess communicated with the intestine by an opening four inches long, and large enough to introduce the thumb into it. There was another abscess in the tumour as large as the other. I am sorry that I cannot give a better description of so interesting a case, on account of not being present at the opening of the animal.

A HORSE CHOKED.

Also communicated by Mr. Cartwright.

On the 8th of October 1837, Mr. Haslam, of Drayton, hair manufacturer, sent his brown hack horse, sixteen hands high, to this town on his way to Chester fair. As soon as he came into the stable, at the White Lion Inn, he commenced eating hay, and the first mouthful or two that he took stuck in his throat, at about nine inches before it enters the thorax: he immediately afterwards became in great pain, straining, and attempting to vomit. This was about 1 p.m.

2 p.m.—I first saw him. He was still in great pain, attempting to vomit, drawing himself up in a heap about the chest and fore quarters; and while straining, his head would be near the ground, and he in a stooping position. The muscles about the neck and part of the chest were in a violent state of contraction when any pressure was made on the obstruction. The tumour seemed to be, in the thickest part, as large as one's wrist, and bevelled off in every direction for the space of four inches or more round. It had the appearance almost as if the œsophagus was ruptured, and the meat diffused. The tumour extended more *across* the front of the windpipe than upwards and downwards. Occasionally he would vomit a quantity of mucus and slimy matter through his nostrils.

Treatment.—I first of all tried to force it down by gentle manipulations of the hand and fist; then by greater pressure with a stick, a person standing on each side of the horse's neck, and rubbing it both upwards and downwards but which seemed to have no good effect in removing it, and only caused extreme pain and convulsive action of the muscles of the breast, &c. I then drenched him with half a pint of sweet oil, and renewed the pressure at intervals, as before: this occupied about two hours. After this, I abstracted five or six quarts of blood, and fomented the neck, and then waited for half an hour, to see if any relaxation took place; he was easier for a short time, but afterwards became more unruly than ever.

I then, seeing no chance of his getting better without introducing the probang, determined on doing so, and accordingly took him into a field and cast him, and put a common probang down his throat, for nearly the whole length of the tube, and which must have gone into his stomach. On drawing it out, it stuck fast towards the top of the œsophagus, and I was obliged to use a good deal of force in getting it out. I fancy that this was occasioned by the tube having passed *through* the obstruction, and having drawn some of it *back again*, which became impacted towards the upper part of the œsophagus, as some of the hay was found about the probang on drawing it out, and more came up on coughing immediately on his getting up.

On his getting up he seemed quite relieved, and the obstruction was gone. He was then taken into the stable and rubbed dry (prior to casting him and during the operation he had sweated excessively), and I gave him aloes Barb. ʒiv and ammon. carb. ʒii in a small soft ball, and also horned down two or three hornsfull of warm water. He seemed very much fatigued; his legs and ears were cold, and, indeed, he was cold all over. His breathing also was quickened. We covered him well with clothing, bandaged his legs well up, tied him up to the rack, and left him alone for awhile.

8 P.M.—Is more comfortable, and his legs and ears tolerably warm, but not so warm as they should be. He drank a sip or two of warm water: seems sore about the top of the throat, and slavers a little.

10 P.M.—More comfortable; but his respiration is increased, and his pulse small and irritable. I drenched him with about a quart of gruel, and put half a bucketful of thin gruel before him in the manger, and ordered the ostler to see him about two or three on the following morning, and if he was any worse, to call me up.

Oct. 9th, 5 A.M.—The man called me up, and said the horse

was going on very well, and had drunk the gruel. I then ordered him a little warm bran mash, which he also ate.

8 A.M.—I saw him, and found that his pulse was slower, but his breathing quicker than natural, and his throat sore at the top.

9 A.M.—I ordered him to be taken very slowly home, and to have gruel two or three times on the road. After he got home, he was placed under the care of a veterinary surgeon (Mr. Matthews). His throat was sore for awhile, but in a week afterwards all was right again.

Some few years ago a whole hen's egg was given to a very valuable hack mare, near here. It stuck in the œsophagus. A farrier was sent for out of this town, who introduced a hand-whip, or something else, to dislodge it; but ruptured the œsophagus, and the mare died in consequence. I have seen many horses choked with one thing or other, but never had occasion to use the probang before.

COWS POISONED BY WHITE LEAD.

By Mr. M. POTTIE, *Yoker, near Glasgow.*

DURING the last two or three years, I have met with four instances of the poisonous effects of white lead in milch-cows, and I have heard of several others.

The Symptoms are always the same; and the patient dies some time between the second and eighth day after she is observed to be ill. At first the cow is dull, heedless, unwilling to move; the eye is fixed, dead-like, void of expression; the bowels are obstinately constipated; the skin is cold, and the coat staring; when the pulse is altered, it is a little slower than in health. There is no hunger and no thirst. Drenches are given with difficulty, for the patient is unwilling to swallow. Subsequently the cow becomes delirious. She seems to be quite unconscious. At liberty in a loose house, she walks round and round, steadily and composedly, till she happens to come in contact with the wall. Then she stands, places her forehead deliberately against the wall; pushes, at first feebly, afterwards with all her strength. The resistance seems to excite her. She never removes her head; but, as her passion rises, she throws her whole strength into the effort; she bellows hideously, fights with her fore feet, and screams, as if choking with rage. With the tail erect, the tongue hanging out, the mouth full of foam, and the whole frame quivering with intense excitement, she persists in her struggles, as if

determined to conquer or die. She recedes not a step, and relaxes not for an instant; till at last the neck yields, and she falls in a heap, sometimes with the head bent under the body. She lies quiet for a short time, breathing quickly; she heeds nothing, and she seems now to be blind. After awhile she rises, and resumes her circumgyrations, which continue till the wall arrests her, and the former madness is renewed. At the close of some of these struggles the cow dies.

On Dissection, I have not had opportunity of examining the brain. I found patches of inflammation in the first stomach, and the third full of food hard, and dry—as dry as bread. I found in the paunch some small portions of glazier's putty, in which there was a little white lead. The cows had eaten it off the canal banks, where there had recently been some men at work, repairing the locks, and filling the seams with this sort of putty. In one of the cows there were only two very small pieces, not so large as an ordinary pea. It is probable, however, there had been more; yet a small quantity seems sufficient to destroy life.

The Treatment which I adopted consisted in bleeding profusely, giving strong purgatives, injections, and diluents. They were all thrown away; the bleeding did not subdue the madness, and the purgatives never relaxed the bowels.

From what I have seen and heard, it seems quite certain that cows are very fond both of white lead and of red lead. A ship carpenter in Dunbarton saw his cow empty a painter's jug, containing white paint. She died quite mad. Cows have been caught licking both red and white paint off gates, pailings, and implements.

It seems, also, that a small quantity will destroy life. Mr. Graham, of Blurthill, lost six cows in one week, several years ago. They had been fed from buckets newly and thickly coated with red paint. The buckets were used before they were entirely dry, and the cows all died roaring mad. Agriculturists and others ought, therefore, to be very careful of their cattle after the painter's operations. Many a cow, I have no doubt, has been poisoned in this way, and the cause never suspected.

CURSORY OBSERVATIONS ON THE COMPARATIVE VALUE OF THE SETON AND THE CAUTERY IN CASES OF SYNOVIAL DISTENTION.

By Mr. Hugh Ferguson, *London.*

Never, since the earliest history of veterinary surgery, have its English practitioners been more busily engaged than of late in discussing the comparative merits of setoning and firing, as remedial operations for the removal of lameness. Each has its advocates and its merits. But it is much to be regretted, that the admirers of the seton, while trying to raise their favourite remedy to the rank which they, no doubt, think it really deserving, are, at the same time, using the most strenuous efforts to effect the total abolition of the actual cautery. The most powerful, and, we might add, from his situation the most influential, of these gentlemen, is Professor Sewell, of the London Veterinary College. I have frequently heard him say, that he would sooner quit the profession than be obliged to abandon the seton needle and replace it with that clumsy, vulgar-looking instrument, the firing-iron.

How far he is justified in so uncompromisedly opposing the use of the actual cautery, those who have had experience in the application of both operations can alone be capable of forming a correct judgment. Mere theorizing avails but little, except in explaining the modus operandi of each.

Among the cauterists, there is one who, by his long experience and the great success with which he has had recourse to the firing-iron, is as well calculated as he is willing to combat the doctrines advanced by the upholders of the seton—I need scarcely say, that I allude to Mr. Turner.

To those who wish to be thoroughly acquainted with the opinions of these gentlemen, as well as those of many other distinguished members of the profession, I would recommend a perusal of the discussion which took place at the Veterinary Medical Association, on the reading of an Essay laid before that society during the session 1836-7, by Mr. Mayer, jun., in which he expatiates largely on the comparative merits of the seton and actual cautery, as applicable for the removal or alleviation of lameness. It appears by the debate, that the *clumsy, vulgar-looking* firing-iron cedes not in the least to its *more polished* rival, the seton needle.

My present object is, to give some testimony towards the superiority of cauterization over setoning, in cases of synovial

distention, whether arising from hydrops articuli, or from an accumulation of that fluid in those bursæ and thecæ having no communication with the articular cavities.

The parts most subject to this disease are:—1st. The pastern joint, its thecæ and bursæ; 2d. The hock and its capsules; 3d. The knee, and its thecæ. I have mentioned them in their order of frequency.

To give a thorough pathological description of this affection would occupy too much space. The following account must suffice:—

There are very few, even of our best horses, that have not what are commonly called "windgalls." They, and almost all other bursal enlargements, are the results of long-continued and frequent exertion; and when not in combination with any other disease (i. e. when there is nothing abnormal but an accumulation of synovia), are seldom the cause of lameness. These bursæ are, however, sometimes the seat of acute inflammation; but in the present instance we shall only allude to the chronic affection, the treatment for both not being exactly similar.

From an inordinate use of the joint, the secerning vessels of the synovial membrane are increased in their action, and secrete a greater quantity of synovia than under ordinary circumstances. This fluid gradually accumulates until there is such a quantity of it, that the synovial capsule, no longer able to resist the pressure, becomes distended, and in some instances to such an extent that its external fibrous tunic is ruptured. It thus allows of the formation of fluctuating tumours, the dimensions and shape of which vary much according to their seat and duration. All this may and does generally happen without being attended with any inflammatory action. Sometimes the contrary is the case. This, however, is comparatively seldom. In some instances the enlargements acquire so great a bulk, that they interfere with the flexion of the limb. This is not unfrequently the case, where either the carpal or tarsal articulations are affected.

Rest, combined with wet bandaging, or any other means of compress, where it is applicable, will, in the majority of instances, reduce the leg to its primitive fineness; but the moment the animal is put to work, the tumours return.

I have closely watched a great number of cases of bursal enlargement: I have taken notes of thirty-eight of them; seventeen of which were treated with the seton: the remaining one-and-twenty by the actual cautery.

Out of the seventeen in which setons were employed, the relief afforded to eleven of them was so slight, that they were afterwards fired; and, excepting in one instance, the most evident

advantage resulted from the operation, while only six of the one-and-twenty that had been fired were obliged to be re-operated upon. On all of these six setons were tried, but without any success, excepting that which might safely be attributed to the length of time the animals were permitted to rest in idleness. But the re-application of the actual cautery was, in the majority of instances, attended with the most beneficial results.

The following is a table of the cases:—

	Number of horses affected.	Setoned.	Fired after having been setoned.	Fired.	Setoned after having been fired.
Windgalls . .	21	10	6	11	1
Bog spavin and thorough-pin	12	5	3	7	4
Bursal enlargement of the knee and its thecæ . .	5	2	2	3	1
	38	17	11	21	6

The greater number of the setoned cases were either horses set apart for experiment or that belonged to private individuals. Those which were in the first instance fired, were, for the most part, the property of post-masters. They were all sufficiently long under observation to make a fair estimate as to the remedial value of the two operations.

It will appear from the above table, that the chances of relief being afforded are greatly in favour of the actual cautery. Indeed, if we take into consideration the *modus operandi* of setoning and firing in such cases, we shall cease to be surprised at the great disparity.

In applying a seton, we are doing neither more nor less than making an artificial fistula; which, from the suppurative action that is kept up during the presence of the tape, acts both as a counter-irritant and a depletent. The joint being, in a measure, thrown out of action, the synovia becomes absorbed, and the fistula healing after the removal of the tape, the tumefaction subsides, and the horse is sound. Sound! 'tis true; but for how long? A short time after the animal resumes his accustomed duties, either over the road, in the field, or on the turf, the bursæ commence to re-enlarge, and at the end of the season are as distended as they were previous to the operation.

The setons having thus failed, firing is had recourse to: not of that light and fanciful description so much admired by ama-

teurs; but the deep cautery lesions, as advocated by Mr. Turner and his disciples; that is, burying the iron as deeply as you can without wounding the capsule or bursæ.

Previous to the operation the enlargements should be reduced as much as possible by rest, the application of wet bandages, and a little aperient medicine.

The surface covering the enlargement being fired in the way above described, effusion takes place in the cellular tissue situated between the external surface of the diseased bursæ and the common integument. The effused lymph becomes organized, and thus renders the cellular membrane more dense, and in fact, to a certain degree scirrhous. The coats of the bursæ likewise partake of this alteration of structure, and even to a greater extent than the subcutaneous cellular membrane. These combined with the tightening of the skin arising from the contraction of the cicatrices, render the part less susceptible of bursal distention than it was even previous to the existence of any disease. It is true that it will not entirely prevent the increased secretion of synovia; but the walls of the cavity in which this fluid is contained being rendered thicker by the inflammation caused by the application of the cautery, they are less liable to be distended by any pressure from within outwards, such as that arising from an accumulation of synovia. If this be not a bandage, and one of the most effectual kind, I know not what is meant by the term. Some have asserted that it is not; bringing forth as a proof the increased quantity of subcutaneous cellular tissue invariably found after firing. This is evidently formed for the purpose of facilitating the movement of the stiffened integument over a part in which there is naturally much motion. It does not, however, diminish the increase in thickness of, and pressure on, the coats of the bursæ, resulting from the operation.

It has been stated, that there is not a contraction of the skin after firing. Hearing that this was the opinion of one whose arguments were likely to be of great weight with his professional brethren, I determined on putting the matter to the test of experiment.

Having previously measured certain extents of surface on different parts of five horses which were condemned for being glandered, I fired them deeply in lines parallel to each other. When the lesions had perfectly cicatrized, I measured the cauterized surfaces, and found that their dimensions were much diminished. I regret that it is impossible for me to render the account of this experiment as complete as it should be, having lost the memoranda relating to it.

Although I believe that it is from the *binding* effects of the

operation that firing is good as a remedy for bursal enlargements, yet I do not consider that the benefits resulting from its application in cases of bone-spavin, and many other diseases, ought to be attributed to the same principle. On the contrary, the idea of a bandage for an inflamed splint, or any other sensitive exostosis, is the very acmé of absurdity.

Various are the methods of employing the actual cautery. There are the diamond, transverse, longitudinal, planary, planatory, penniform, and many other ways of firing. The chief object, however, being to combine great inflammatory action with as little after blemish as possible, I prefer drawing my lines parallel to each other, and in the same direction as that of the hair. By this means there is much less chance of sloughing and after-blemish than when any other is had recourse to.

When I use the cautery, I do so to all intents and purposes; experience having proved to me, that firing, unless the lesion be deep, is little more efficacious than the application of a strong blister. How different are the French and Italian modes of firing from that adopted by the generality of English veterinarians. In France they not alone fire deeply, but, for once that the English practitioner passes the iron over a line, they do so at least ten times, thereby exciting a degree of inflammation considerably greater than when the operation is more quickly performed. They regard not the depth to which the iron enters so much as the quantity of caloric imparted to the diseased organ. This procedure, though cruel, is most efficacious. I have seen one of the Alfort professors occupy nearly three-quarters of an hour at one articulation. At that school they also invariably fire in the direction of the hair.

NOTE ON THE ŒSTRUS EQUI, OR THE BOTS OF HORSES.

By Bracy Clark.

[We extract this, at the desire of Mr. Bracy Clark, from the Entomological Magazine of April last. The history of the bot of horses is interesting to us; but with the sarcasms in which the author so freely indulges we have nothing to do. Mr. Bracy Clark is addressing the Editor of that Magazine.—Y.]

"In reading your last number, I observed the unexpected honour of my name being inserted, with a free accusation of my "being in error;" which imputation precedes, instead of follow-

ing, as it should properly do, the very cogent proofs of error which are adduced. However, *humanum est errare ;* and we are none of us exempt from the humiliating imputation of "being in error," therefore it were idle to be in a passion about it. Having written much on this subject, errors have undoubtedly crept in, although they do not at present occur to the sagacity of my critics. The notions now broached as new and correct, existed *inter vulgos* half a century ago, and it was my business, and the especial object in my "Essay on the Bots of Horses," to remove them. I thought I had succeeded, and all the naturalists of eminence during forty years have coincided with me, as far as they have condescended to acquaint me with their views on the subject. It seems, however, that we are to go back to the old absurdity of the larvæ of *the œstri,* without teeth, or any instruments of any kind whatever, gnawing through the horse's stomach. And now, having performed this notable feat, what have they accomplished? Why, gnawed away their own standing, to effect their own destruction ; for, falling through the hole they have made, into the cavity of the abdomen, they must there inevitably perish. Now, suppose any one were to tell you that a caterpillar, without teeth or jaws, gnawed from under himself the leaf on which he stood, and very wisely tumbled himself to the ground, and there perished miserably! would you not laugh at such a folly? Nature, or, more properly speaking, an all-wise Providence, does not commit such errors as these, but gives to all her creatures their food in due season, and a safe standing while they are eating it. Surely Linnæus was right when he declared he could find no distinctive character between the genus *Homo,* and the genus *Simia*—"by their *acts* shall ye know them :" whilst some are devotedly labouring to clear the stream of knowledge from all its impurities, others, with quadrumanous activity, busy themselves with scratching back those very impurities again into the current.

"But I believe I can trace this nonsense to a preparation of Mr. Coleman's, at that stupid Veterinary College, which preparation I saw a few years after publishing my work. It exhibits a mass of bots adhering to a piece of a horse's stomach : some of the bots are deeply sunk into the substance, some are only half immersed in it, and some are bodily and completely passed through it. On seeing it, I was at first staggered, but, on consideration, I found a solution of this ridiculous anomaly. The piece of stomach has been allowed to become putrid, as its loose flocculent texture sufficiently shews ; and then the bots, which possess a hardish body when contracted, while living, have been, either

purposely or accidentally, by being rolled up in the substance, forced, some a quarter, some half, and some entirely through it. Such is the preparation which has misled some thousands: a second edition of my "Essay" may ere long appear, when the affair will have a more lengthened exposure.

"The critics alluded to make me to say, that these larvæ feed on the 'vegetable contents of the horse's stomach:' this shews they know nothing of the matter, for I have expressly stated that they feed on chyle, which chyle is often tinged of a green colour, from its impurity;—and pray what is the fluid to which they allude—but chyle?

"The opinion that bots are not salutiferous, is worth nothing at all, without some proofs to support it. I have given many in support of a contrary opinion."

EXCISION OF THE RIBS.

[In the portion of the proceedings of the Veterinary Medical Association which was contained in our last number, Mr. Ferguson's interesting case of the excision of parts of two of the ribs of the horse appeared. He says that Baron Richerand had the honour of introducing this operation into the practice of human surgery. Mr. Ferguson is mistaken here; it had been repeatedly performed, four or five years before, by Signor L. Cittadini, of Bologna. In addition to this, Baron Richerand's operation was an unfortunate one: Cittadini's were completely successful. It is but an act of justice to the Italian professor to place on record, among our archives, an account of these first operations on the biped. Richerand failed in his first experiment in France; but it has gradually become a recognized operation among the French surgeons. It has been attempted on our side of the channel. Dr. Arnott has been pre-eminently successful. The American surgeons have likewise been bold and successful. Accounts are given of their proceedings in the *Lancet* for 1827-8, vol ii, page 484, and 1837-8, ii, p. 606. A more recent case occurs in the *Lancet* of July 28, 1838. Among veterinary surgeons it was attempted in France by MM. Dupuy and Prince on a cow, and by M. Ollivier on a mule. After those of Cittadini, we will relate the experiments of these French professors. Mr. Ferguson is the first Englishman who has placed on record a case of operation of this kind on the quadruped, and we are not

aware that it has been performed by any other British veterinarian. These cases will occupy a few pages; but after the reader has perused them he will be in possession of all he wishes to know respecting the excision of the ribs.—Y.]

THE following is the account of Sign. Cittadini's operations on the human subject, as extracted from *Ann. Univ. di Medicina.*

"The first case is that of a female, who had for a long time been affected with fistulous ulcers, caused by improper treatment of an absess on the left breast. Several methods of treatment, the actual and potential cautery, &c. had been tried, but without any effect; and when M. Cittadini first examined the fistulous canals he found a portion of the sternum, and the cartilages of the sixth and seventh rib, denuded. These parts were laid open by an incision, and it was found that the sternum was carious to the extent of more than an inch, and that the cartilages were considerably swelled, and in some cases perforated. In order to produce exfoliation of the bone the actual cautery was employed, which caused a violent inflammation of the pleura, but failed in its main object. Six months after this period a large quantity of matter had gradually collected in the pleura; the patient was affected with constant pain and dyspnœa, and was much emaciated. M. Cittadini having laid bare the bone a second time, found a fistulous passage between the sixth and seventh rib, leading into the cavity of the chest. He divided the muscles, tied the intercostal arteries by means of a curved and blunt-pointed needle, and removed those parts of the two ribs which were comprised between the ligature and the sternum. A large trephine was now applied to the diseased part of the sternum, and all the isolated parts, by means of a spatula, removed from the pleura, which, although diseased to a great extent, could not be removed on account of the great proximity of the internal mammary artery. The operation lasted a considerable time; and on the introduction of air into the thoracic cavity a violent attack of suffocation took place, from which the patient was recovered by frictions, and the insufflation of air into the lungs. The wound was quickly covered with dossils of lint, which were kept in their place by an elastic bandage. During two months the patient laboured under dyspnœa: the wound having, however, cicatrized, this symptom gradually disappeared, and she was finally cured."

The second case was that of a young man who had, for a considerable time, a fungous tumour on the cartilages of the sixth, seventh, and eighth ribs, about an inch from the xyphoïd cartilage. Repeated cauterization and excision having been per-

formed without any permanent success, M. Cittadini suspected that the root of the evil was in the ribs, and that the disease might be effectually cured by their partial excision. By a circular incision round the tumour, a portion of the skin, three inches in diameter, was removed, and the fibres of the rectus and great oblique muscles having been divided, the greater part of the sixth, seventh, and eighth cartilages were laid bare. It then appeared that the disease occupied a space of no more than about two inches. The cartilages were divided by a strong probe-pointed bistoury, and the tumour having been thus isolated, was detached by a spatula from its adhesion to the pleura. This was followed by an abundant hemorrhage, which could be stopped only by the actual cautery. Cicatrization took place very slowly, and was not completed until after three months, when the patient was quite recovered.

A young man of plethoric habit and a strong constitution, who laboured under delirium from inflammation of the brain, stabbed himself with a stiletto in the left side of the chest, the instrument entered below the right nipple, and glided along the upper margin of the sixth rib, in which it remained fixed. The hemorrhage from the wound was abundant, but was soon arrested. The patient recovered from the inflammation of the brain, but a considerable suppuration took place in the wound; and, two months afterwards, a fistulous passage had formed, leading to the diseased bone. Incisions and cauterization were employed in vain; and it having been found that the cartilage and the osseous part of the sixth rib were denuded and rough, M. Cittadini determined upon excision. The integuments having been divided, the cartilage was removed by a probe-pointed bistoury, and the diseased part of the rib by the cutting forceps. The principal arteries were tied, and the smaller branches compressed. On removing the diseased portion of the pleura, the chest was opened on several points. At this part of the operation the breathing became very short and laborious, but ceased to be so after a few hours. After two months the wound had perfectly healed.

In a fourth patient suppuration and caries of the sixth rib had taken place after a violent attack of pleurisy, and a fistulous passage had been formed. During the operation, the rib and cartilage were found so swelled and indurated, that M. Cittadini was obliged to use the trephine instead of the bistoury; the hemorrhage was considerable, but no difficulty of breathing arose during the operation. The recovery was very tedious, and not completed before the end of six months.

In the fifth case, the disease of the bone was the consequence

of a violent contusion; a portion of the third rib was removed, and the patient cured after two months."

It appears from these cases, that the partial excision of the ribs is not so dangerous an operation as is generally believed, and the hemorrhage from the intercostal arteries is easily stopped by compression or ligature.

The introduction of air into the lungs is the circumstance most to be dreaded: in the cases in question, however, it caused only a transitory danger. The fatal consequences of caries and suppuration of the ribs and their cartilages are but too well known: in many instances they might, by a surgical operation, be avoided.

The patient of MM. Dupuy and Prince was an old cow that was devoted to certain experimental operations. "Injections of vinegar were twice thrown into the left cavity of the chest. Eight days after the second injection, four inches and a half of the eighth rib on the same side were removed. A great quantity of colourless serous fluid escaped from the wound, which was large enough to admit of the introduction of the hand, and by means of which the costal pleura might be easily felt, covered with false membranes, flocculent, soft, and thickened to the extent of two inches. Scarcely had this fluid escaped, when the cow, whose breathing had been rendered very laborious by these injections, appeared very materially relieved. Being liberated, she began immediately to eat; she ruminated, and the movements of her flanks, and the pulse, returned to their natural state. It was curious to see her so much at ease when she had a window in her chest five inches long, through which the students could easily see the movements of the lungs.

"On the second day there was a convulsive motion of the flank, very much resembling that which accompanies and characterizes broken-wind; but, with this exception, very little appeared to be the matter with the beast, who lived twenty days in this state, eating and ruminating well, and having her muzzle as moist as another cow in perfect health.

"The only accident that occurred during this period was the development of the larvæ of the house-fly, even within the chest. On the fourth day they were perceived on the borders of the wound, and almost on the lung. Injections of warm water were thrown into the pleura in order to remove them; and, better to facilitate the escape of this fluid, a counter-opening was made between the cartilages of the seventh and eighth ribs. Some empyreumatic vegetable oil was smeared over the edges of the wound, but, in spite of these precautions, the larvæ appeared in almost countless numbers.

"On the 28th, the cow was turned, as usual, into a lucern field, where she was accustomed to feed. There were no appearances of danger, or even of disease about her; but at noon she was found dead.

"*29th.*—She was opened, when the following lesions were observed:—The borders of the wound were covered by a great number of maggots, which had buried themselves in the fasciæ of the muscles. All the surface of the left pleura, in contact with the air, was of a deep greyish black. It was covered with an immense quantity of larvæ, which were in clusters, two inches thick, at the bottom of the pleural sac. Every portion of the costal and pulmonary surface, where these larvæ were found, was covered with a false membrane, hard, fibrous, yellow, and having considerable resemblance to the cervical ligament. It was in this pseudo-membranous substance, varying from two to three lines in thickness, that the larvæ had formed the cells in which many of them were contained. There was no fluid in the pleural cavity, for the counter-opening was disposed so as to facilitate the escape of that which would otherwise have accumulated there. It was impossible to distinguish the pleura, for, instead of that membrane, the internal face of the ribs was covered with a substance, two lines in thickness, black externally, white beneath, and resisting like the oldest fibrous induration. The pulmonary surface presented the same aspect. It adhered strongly to the eight first ribs, by means of a fibrous production similar to that by which the ribs were covered. An adhesion of the same kind was found between the sixth and seventh ribs, anteriorly to the wound.

"A deep longitudinal incision through the whole extent of the left lung displayed the lesions of that organ. The diaphragmatic surface had lost a little of its ordinary development. We found some crepitating lobules not altered in structure, but they were surrounded by a serous infiltration of the interlobular cellular tissue. As we advanced, we found a sudden contraction of the lungs, some of the lobules of which were red and hepatized. The infiltrated fluid between had increased, and, becoming first gelatinous, and then fibrous, extended itself more and more, and compressed and strangled the lobules. The parenchymatous substance of these offered some fibrous points, which, increasing in number, united themselves together, and confounded the lobules with the fibrous structure which had at first surrounded them. Other lobules, without offering any of these grey and fibrous points, were red, hard, elastic, and homogeneous. Such was the state of the left lung immediately behind the heart, and where it was scarcely three inches in thickness.

"From a level with the centre of the heart to its anterior extre-

mity, there was no lung, or, at least, the change of structure which had taken place rendered it no longer recognizable. It consisted of nothing more than a fibrous leaf, adhering strongly to the mediastinum and the trachea, and the thickness of which did not exceed more than six lines. It was black exteriorly, and its substance, excessively condensed, was homogeneous, white, and elastic.

"Between the mediastinum and the pericardium there was an albuminous infiltration, having the consistence of tremulous gelatine of a citrine colour, and an inch and a half in thickness. In the middle of this infiltration a great number of capillary bloodvessels could be traced. We noticed the same thing in the infiltration of the cellular interlobulary tissue at the base of the lung.

"The right lung offered no other lesion than a serous interlobulary infiltration, without any development of bloodvessels. This was small in quantity, and did not exceed half a line in thickness. There was also, between the serous membrane of the right mediastinum and the pericardium, a gelatiniform collection more than an inch in thickness, and with the development of capillary bloodvessels. The sac of the pericardium contained about four ounces of a yellow serous fluid. The heart retained its natural consistence and colour, but the thickness of its walls had diminished. The sub-costal branch of the left sympathetic nerve was red, occasioned by the injection of the vessels surrounding the nerve and its filaments. The intestinal tube presented nothing more than a small number of slight red spots, scattered over the small intestines, and occupying the thickness of the mucous membrane and the subjacent cellular tissue.

"These facts confirm the opinion which we have already stated of the nature and the causes of this morbid change in the structure of the lungs. The cow was sound; at least, she presented all the signs of health. We injected vinegar into the pleural cavity. Pleurisy was produced, as was evident from the character of the liquid which escaped when we extracted a portion of the rib. After this operation the animal seemed to recover every appearance of health, a circumstance which we probably could not have foreseen; and she lived twenty days after this, having the whole of one lung in contact with the atmospheric air by means of an opening nearly six inches wide, which permitted the entrance of insects, and of every light body floating in the air.

"At length she died, and, on examination, we found all the lesions of chronic pleurisy, together with those of infiltration and

induration of the interlobular cellular tissue of the lungs. These alterations of the pleura and of the interlobular cellular tissue are co-existent; and if we recollect how great is the analogy between the serous membranes and the cellular tissue, we shall not, perhaps, hesitate to regard the pleurisy, which was the consequence of the injection, as the possible cause of the interlobular change. To these considerations we may add one more—the abundance of the interlobular tissue which exists in the lung of the ox, and also the extreme largeness of its meshes. Then, if the analogy between the cellular tissue is such, that we say of the latter, that they are nothing more than cellular tissue condensed—if the largeness of the meshes of that tissue still more increases this analogy in the ox—if, in this animal, the interlobular tissue and the pleura present similar lesions, under the influence of a cause which acts directly on the latter alone, may we not admit that all the causes which, in the ox, produce irritation of the pleura with effusion, may also be succeeded by infiltration of the serous interlobular substance, and thus unveil one cause, not yet sufficiently regarded, of the frequent serious character of pleurisy? We are in possession of many facts which confirm this opinion. In conclusion, we request the attention of practitioners to this point, inasmuch as an alteration of the interlobular texture may produce phenomena which will mask those of pleurisy, and, perhaps, cause the real disease to be considerably misunderstood, and thus produce an erroneous diagnosis and an erroneous treatment."

[We have wandered thus far from our proper subject—the excision of the ribs—and introduced these speculative opinions of MM. Dupuy and Prince because there is something very ingenious in them, and the subject is not sufficiently understood: but our principal object in the insertion of this case is, to shew that a considerable portion of a rib may not only be removed with ease, but with safety, for a large opening into the pleural cavity was left unattended to for twenty-one days, and no serious inconvenience was experienced. The cow seemed to preserve her health and appetite to the last.

The next case, recorded by M. Ollivier, was a successful one. In justice to him we record it; but we confess that we do not like the use of the cautery at a white heat in order to remove the diseased portion of bone. We shall by degrees limit, although we can never quite dispense with, the use of this rude and torturing instrument, the relic and the disgrace of former times.—Y.]

"On the 11th of September, 1831," says M. Ollivier, "I saw a mule, eighteen years old, that had a wound as large as a five-sous piece about the middle of the ninth right rib. The wound, quite recent, was occasioned by a pointed piece of wood that had by some means got into the wadding of the pack-saddle. I covered it with an emollient cataplasm, for a great deal of swelling had commenced, and on the morrow there was a tumour as large as a cricket-ball, and which was very much inflamed. I then sounded the wound, in order to assure myself whether it penetrated far beneath the integument, and I found that the rib was perfectly exposed. An incision with my scalpel then proved that the periosteum was lacerated for a space of more than two inches in length. I applied a stimulating dressing to the wound, for I thought that some unhealthy osseous granulations were not impossible.

"15*th*.—The peculiar fetid odour, and the black colour of the discharge, told me that caries of the rib had commenced. I applied the mixture of Villate*.

"On the following day I found some small rugous granulations, which were readily detached from the bone, and adhered to the dressing. This convinced me that the caries was rapidly proceeding; for I have often remarked, in the course of my practice, that the true exfoliation of carious bones is always accomplished by the forcing away of a portion of bone, of greater or less size, by the new growths beneath, and not by simple granulations detaching themselves from the carious part.

"I continued to apply stimulating dressings to the wound until the 28th, at which time the carious portion was so much softened that there was spontaneous separation of the fragments of the rib to such an extent that I could see the motion of the fractured extremities in every act of inspiration and expiration.

"Hitherto the health of the mule had not been sensibly deranged, but now he began to exhibit evident symptoms of fever. I took away five pounds of blood, put the animal on restricted diet, and administered some cooling medicine. I was convinced that it had now become necessary to remove all the mortified parts; but I hesitated to have recourse to such an operation, on account of the danger of injuring the pleura, and making an opening into the cavity of the chest. At length, however, I was compelled to proceed.

"After having dissected away all the tissues which covered the carious portion of the rib, both above and below it, I had a wound six inches in length. I had prepared two cautery irons

* As astringent and escharotic lotion, composed of subacetate of lead, and the sulphates of zinc and copper dissolved in vinegar.—Y.

or knives, of which the blade, concave on its cutting edge, was eight inches long and one inch wide. I brought them to a white heat, and then applied the cutting edge to the two ends of the rib which I wished to excise. I had previously taken care to adapt the concavity of the knife to the surface of the rib. By means of these knives, which were heated and applied again and again to the ends of the rib, I cut off more than an inch on each side, and was at length convinced, by careful examination of the wound, that every carious part had been removed. This operation, as may be imagined, was long and painful; but it was the only means that I could take to obviate the threatening evil, for I could not persuade myself of the possibility of using a knife of the common construction in such an operation.

"I brought the edges of the wound together by means of two sutures, and then dressed it with pledgets of tow covered with the common cerate, and I invested the whole with a thick and tight bandage. I also took away eight pounds of blood, and ordered a restricted diet, cooling medicine, and emollient injections. During the remainder of the day the animal was altogether dispirited, and there was considerable fever.

"29*th*.—There was a tumefaction, as large as a man's head, over the wound, which was black, and exhaled a fœtid smell: the respiration of the animal, however, was more natural, and his spirits were evidently returning. The same regimen was continued, and the wound was covered with pledgets of tow soaked in a solution of chloride of lime, and renewed three times a day.

"30*th*.—The appearance of the wound was much improved, and the patient was eager to eat. The same dressings were applied, and, beside the mashes, a little hay allowed.

"31*st*.—The swelling has entirely disappeared, and the wound looks well. Dress with dry tow.

"*Oct.* 5*th*.—The superior extremity of the rib is covered with healthy granulations, and the progress of the caries seems to be quite arrested. The lower edge of the bone, however, has its extremity rugous and black, and it is covered with unhealthy granulations. I prolonged the incision inferiorly, and dissected away the fibrous tissues which covered the rib, and I found that the caries was here proceeding. I dressed the wound with Villate's mixture.

"8*th*.—Seeing that the caries of the inferior extremity of the rib continued to progress, I determined on extracting this portion of it also. I made an incision four inches long in the direction of the rib, and carefully dissected away all the diseased tissues which surrounded it; and when I had completely isolated it, as

I supposed, I took it between my finger and thumb, and with a sharp pair of scissors completely removed it. The wound was then dressed with tow covered with cerate, and carefully preserved from all contact with the air. The animal did not appear to be much incommoded or weakened by this second operation; seven pounds of blood, however, were abstracted, and he was put on low diet.

"10*th*.—The edges of the wound are much swelled, and the wound itself has a pale and unhealthy aspect: I covered it with charcoal powder from the fir-tree*, after having well washed it with a solution of chloride of lime.

"14*th*.—Healthy granulations appeared over the whole surface of the wound. Dress it with short and fine tow.

"20*th*.—Every thing goes on well, and the wound is rapidly closing. Continue treatment.

"*Nov*. 6*th*.—The animal is perfectly cured, and gone to work, and he continued well until last February, a space of more than five years. I then lost sight of him."

Recueil de Méd. Vét. 1836, p. 526.

THE VETERINARIAN, NOVEMBER 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

We gladly yield the post of honour in the present number of our periodical to the Royal Veterinary Schools of Toulouse and Dresden. In December we trust that we shall be enabled to give a detailed account of the termination of the session of 1837-8 at Alfort. These sketches of the progress of our art are exceedingly pleasing, and highly useful. The termination of the session in the greater part of the medical schools, and, we believe, in every veterinary school but one, is distinguished by a concours of the friends of the professors, the pupils, and the science; by a rapid sketch of the aim and progress of the school; by practical proofs of the diligence and improvement of certain of the pupils; and by the distribution of certificates, or other honorary rewards, among the most deserving of them. The time is not far distant, we trust, when the English veterinary school will cease to be an exception to this almost universal custom; and,

* This charcoal is supposed to possess certain stimulating properties, from the quantity of turpentine which it contains.—(Y.)

as it regards one, and, perhaps, the most important branch of instruction, *not removed into the heart of another and far distant county*, but on the ground where the friends of science and of *agriculture* first established it, correspond with M. Bernard's eloquent delineation of what a veterinary school ought to be.

The following is the account of the proceedings at Toulouse, as extracted from the Journal of the French veterinarians of the south:—

On the 19th of August 1838, a public meeting, most numerously attended, was held for the distribution of prizes and diplomas to the pupils of the veterinary school. The Prefect of the department presided, and the Mayor of Toulouse, together with the Commandant-general of the province, were present.

The Prefect opened the sitting by reminding the pupils of the importance of their art, and of the counsel which he had ventured to give at the recent installation of their new director.

M. Gellé then read a statement of the proceedings of the school during the last session*, and he introduced this by a discourse on agriculture, and its connexion with the prosperity and stability of the state.

The new director of the school then addressed the meeting. He took a rapid survey of veterinary schools generally, but he principally considered them in connexion with agricultural industry and prosperity.

"Scarcely half a century," said he, "has passed since the institution of veterinary schools; and these infant establishments, as we may yet call them, have acquired a daily-increasing importance, and which they will quickly far surpass. This importance arises, not merely from their real utility, indispensable on the treatment of the maladies of domesticated animals, but their intimate connexion with agriculture and commerce, two of the most influential causes of the prosperity of a country. In fact, what is the curing of some sick animals, the number and value of whom is necessarily limited, compared with the application of a comprehensive knowledge of the animal economy to the multiplication, improvement, and perfectionating of the various breeds of domesticated animals? It is under this last point of view especially that the influence of our schools should be regarded in the south of France, so richly endowed with a temperate climate, a fertile soil, and numerous breeds of beautiful cattle.

"The young men educated in our schools, and instructed not only in the treatment of disease, but in every branch of rural

* We trust that M. Gellé will favour the public with this document. These *compte-rendus* would constitute by far the most important division of our Journal.

economy and natural science, are establishing themselves in every part of the country. The knowledge which they have acquired will be widely disseminated, through the medium of daily intercourse with the country people, and much similarity of habits and pursuits. Their disinterested counsel will often be listened to, while the advice of other teachers belonging to various learned societies, and even the precepts of their immediate superiors or landlords, less familiar with the language, and habits, and prejudices of the lower classes, will be disregarded, or be received with distrust, or obstinately opposed. It is among the inhabitants of the country, where the most contracted views on a thousand subjects connected with husbandry and the commonest scenes of life prevail, that the lot of the veterinary surgeon will be cast; and there he may be useful to an extent that can scarcely be appreciated. There is a natural, a most beneficial alliance between our pupil and the agriculturist.

At this period, when every art is overburdened with professors, and when crowds of aspirants present themselves in every public office and in every liberal profession, the simple life of the country is comparatively abandoned; but the time, doubtless, is not far distant, when all these votaries of ambition, their expectations totally deceived, will return and seek for an assured refuge against the vicissitudes of fortune and the storms of public life. Already agriculture counts in its ranks one distinguished class of men, to which she is indebted for many improvements: these are our old warriors, who, after having valiantly fought for their country, are come to repose in their native fields after the fatigues of war, and perhaps the illusions of glory.

Our legislators well comprehend the importance of this epoch; for while they weigh every other branch of the public service in the balance of severe economy, their hands are liberally open when the word *agriculture* is pronounced.

It is, in fact, as M. Deprod has said, that the true philosopher's stone is alone to be found in the improving cultivation of our fields; and, to continue the comparison, that is the crucible whence is elaborated the grand material which constitutes the basis of all art and industry throughout the world.

M. Yvart, the newly-appointed inspector-general of the veterinary schools, and of our various studs, is at this moment departing for England, in order, a second time, to steal from our neighbours some of the secrets by means of which they have perfected their noble breed of cattle. Before this he had naturalized among us one of the breeds of long-woolled sheep, which will prove a source of inexhaustible wealth to the French manufacturers. By what treatise on any branch of pure veterinary science could he have

achieved such a triumph for our profession and for the country? Directing their attention to objects so important as these, I doubt not that our schools will soon resume the title which they once bore, *Ecoles Royales vétérinaires et d'économie rurale.*

The school of Toulouse will take this useful direction, studying especially, and as the very object for which it was founded, not only the diseases of the ox and the sheep, which as yet are less known than those of the horse, but every thing that is connected with the multiplication and the perfectioning of these valuable animals.

As to you, gentlemen, students of our school, who come before us to-day to receive the reward of your industry and good conduct, it will be little to have indicated the object at which you ought to aim, without having given you the means of attaining it. Each of your instructors has anxiously endeavoured to discharge this duty, by making you acquainted with the general principles which ought to guide your present studies and your future practice. If you have acquired the talent, the method, the tact of observation—if you have learned to study, our task will have been accomplished. It will be for you to follow out the lessons which we have inculcated. Veterinary science, like every other, is progressing, and it is impossible to assign its ultimate limits. How many important facts does one new idea sometimes unfold! Into what sad errors do we sometimes fall, when we too hastily form our conclusions! Therefore it is with prudence, and matured judgment, that we should collect knowledge. We may apply to science what was said of the earth,—she is exacting, but not ungrateful. You must work hard if you wish to accumulate a rich harvest.

In conclusion, permit us to hope that when you leave us in order to take your proper rank in society, we shall not be entirely separated from each other. Your preceptors will feel a deep interest in your future welfare. We shall love to trace you in the first steps of your honourable career—to counsel and to guide you, if there should be occasion for it, and to cherish those relations with you that will be useful to science. Your future prosperity or your ill-success will depend entirely on yourselves. With regard to most of you, the useful and unpretending profession which you are about to embrace will not have sufficient of science about it to entitle you to any great distinction. Independent of those principles which ought to direct every good man, your manners should be mild and simple, and modest as the theatre in which your studies have been pursued; and to these should be added habits of order, economy, and disinterestedness.

Advice of a similar nature has already been given by the chief magistrate who presides at this meeting, and whose solicitude for your welfare you well know. The situation which I have the honour to fill in this school renders it imperative on me to offer you the best counsel that I can devise; you will take it in good part, and it will make the desired impression. I am perfectly assured that it will. You will sustain the reputation of the school of Toulouse. Then, hearing of your success, with which we shall be hereafter associated, we shall be proud to have prepared you for your profession; and the veterinary school of the south, which excels all the others in the beauty of its architecture, the perfection of its arrangements, and its situation in a country essentially agricultural, our school, I say, will have no cause to envy its rivals.

M. Lavergne, secretary to the committee, then terminated the sitting by reading a procès-verbal of the proceedings of the examiners. Prizes were awarded to two of the pupils of the first, the second, the third, and the fourth year, and diplomas were granted to thirty-five pupils of the fourth year, whose examinations had been highly creditable to them.

Journal du Midi, Septembre 1838.

Report of the Royal Veterinary School of Dresden in the Session of 1837-8.

By Dr. Carl Gottlob Prinz.

The necessity of recording the proceedings of the veterinary school at the close of every session has given rise to the wish that, at least, some extract from it should be placed before the public. Our intention in the present sketch is to give a slight history of the most prevalent diseases of the domesticated animals in our hospital during the last year, and the mode of treatment which we adopted.

In the course of the year, 2411 were examined and treated; of which there were 1429 horses, 3 asses, 106 cattle, 5 sheep, 8 goats, 1 roe, 44 pigs, 747 dogs, 27 cats, and 41 poultry. Of this number there were remaining from the former year 16 horses, 1 cow, 2 sheep, 1 goat, 1 pig, 8 dogs, and 3 cats; 56 horses and 12 dogs were also examined as to their soundness and capacity for service.

293 horses, 2 asses, 1 cow, 3 sheep, 1 goat, 3 pigs, 160 dogs, 4 cats, and a fowl, were admitted into the hospital, and there treated. Those that were brought at stated periods for advice

and treatment were 1649: namely, 1050 horses, 2 cows, 2 sheep, 2 goats, 13 pigs, 522 dogs, 19 cats, and 39 fowls. 294 patients were visited at their owners' residences; namely, 86 horses, 1 ass, 103 cows, 5 goats, 1 roe, 28 pigs, 65 dogs, 4 cats, and a parrot.

It appears that there has been in this year an increase of 294 patients (2156 only having been treated in 1836), and this increase is principally in the horses and dogs.

The greatest number of patients nnder treatment at one time was in June, when 270 were on the sick list. The smallest number (127) was in January; the average number in each of the other months was 198. The greatest number of horses under treatment was in June (160), and the least numbers in January (69) and in December (72); the avarage number in the other months, was 123.

The greatest number of cattle came under treatment in November (17), and the least in January (1): the average numbers were 9 per month.

The dogs were most numerous in June, when we had 90 patients; and there were fewest in December (50): the average of them per month was 59.

We had most diseased cats in October (7); the average per month being from 1 to 3.

In general, the following is a fair average of our patients:—

Out of 100 animals, 80 are cured; 6 remain uncured; 4 are killed, 7 die, and 3 remain under treatment.

Of 100 horses, 4 were only examined; 81 cured; 8 remained uncured; 3 died in consequence of violence, and 3 by disease; and 1 remained under treatment.

Of 100 cattle, 71 were cured; 1 was left uncured; 16 were slaughtered; 5 died; and 7 remained under treatment.

Of 100 dogs, 1 was only examined; 77 cured; 2 remained uncured; 7 were killed; 12 died; and 1 remained under treatment.

The mortality among horses was greatest in June, when 10 died; and, in April and August, 7 died; but the average number of deaths per month was from 1 to 3.

Among dogs the mortality was greatest in November, when 24 died. It was also great in September and October, for then we lost 17 or 18; but the average number in each month was between 6 and 10.

Epizootic Disease.

The predominant symptoms of diseases of an epizootic nature were, in general, of a bilious and nervous character. They

were not only frequently associated with fevers and bilious diseases and their consequences, as in the dog labouring under dropsy, and the horse with water in the brain; but likewise in all periodical fevers. Rheumatism and catarrh were almost always accompanied by exacerbations. In like manner the cerebral diseases shewed themselves, partly in the frequent appearance of a nervous form of disease, as vertigo, apoplexy, madness, &c.; and partly in many nervous symptoms in febrile diseases, and in the transition of the latter into nervous complaints. The frequent terminations of internal inflammation in mortification, and the more frequent occurrence of a bad form of catarrhal lymphatic fever degenerating into glanders, appear to confirm this.

In January the most prevalent diseases among horses were apoplexy, inflammation of the brain, and fever; the most frequent among pigs were quinzy; and, among dogs, catarrhal fever and inflammation of the throat and ear. One dog was attacked by rabies.

In February there were many cases of vertigo and mad staggers among horses—some rheumatic fever with a bilious character; and one horse was attacked by tetanus. The dogs suffered from bilious catarrhal fevers, vomitings, and diarrhœa: one dog also became rabid.

In the first half of March, catarrh was very prevalent among all domesticated animals; and, in the latter part of the month, rheumatism predominated. Horses were attacked by spasmodic colic, an eruption on the skin, and suppurating sores about the tendons. Swine by quinzy, and dogs by a nervous rheumatic fever. Three dogs, which had been bitten, became rabid; and a horse died of tetanus.

In April, catarrh and rheumatism alternately predominated among horses, cattle, goats, and dogs. In consequence of the increase of bad pasture there were many cases of apoplexy and inflammation of the brain. A horse became tetanic; a dog rabid; and inflammation of the udder and throat appeared among sheep after lambing.

In May, the horses suffered from spasmodic colic; calves from rheumatism and diarrhœa; lambs from stiffness of the joints without swelling; and dogs from nervous catarrhal fever. One dog died rabid.

In June, pleurisy with hydrothorax was very prevalent among horses, as was rheumatism. Dogs and cats were frequently attacked by influenza; and two dogs became rabid from inoculation.

In July, catarrh and rheumatism were again prevalent among horses, cattle, and dogs. Sheep shewed a great inclination to

gnaw and eat their wool, and died of bloody flux. Two dogs, who had been bitten, were attacked by rabies.

During the whole of August colic, inflammation of the intestines, inflammation of the lungs, and inflammatory rheumatic fever conjoined with inflamed watery swellings of the legs, were very prevalent among horses. An ass was attacked by tetanus; and a dog became rabid.

In September, an unusual debility and want of appetite was observable among horses; vertigo and apoplexy were likewise prevalent. Among dogs an epizootic catarrhal fever appeared, which was in general, from nearly its commencement, accompanied by fits. This epizootic continued to prevail until the end of the year.

In October, the most prevalent diseases among horses were spasmodic colic and inflammation of the lungs: among mares, daggers prevailed very much. Cattle were attacked by violent diarrhœa, and swine by quinzy.

In November, a very prevalent influenza appeared among the cavalry horses, and also a few others. In the commencement it was attended by debility, difficulty of breathing, and other symptoms of inflammation of the lungs; but, by great attention and care, the disease became, in from seven to eleven days, a simple catarrhal fever. Dogs were affected by spasmodic cough, vomiting, diarrhœa, and scrofula.

In December, bilious catarrhal fever, sore throat, and gangrenous catarrh, were very prevalent diseases among horses; and cattle were attacked by inflammation of the lungs.

Epidemics.—These were prevalent according to the seasons and the changes of the weather, but only two deserve to be considered as real epidemics; and those which appeared among cattle in different parts of the country may also be considered as enzootics.

The first of these diseases appeared in the upper part of the mountains containing mines, and is known by owners of cattle under the name of "palsy in the cow." It shews itself particularly in small farms, and not unfrequently carries off three or four victims every year. When the cow is first attacked by this disease it loses all appetite; it is then seized with an insatiable desire to lick all foreign substances which are near it, and it wastes away so fast that its bones almost come through its skin, and the owner is compelled to destroy it. The cause of this disease appears to have been the using of sour meadow hay as fodder, which, owing to the dryness of last year, many persons had been obliged to do.

The second disease predominates in the early part of the year, in

the upper provinces, and is also known under the name of "palsy in cattle." This disease is mostly found among the little farmers, to whom it occasions considerable loss. It commences with an inflamed state of the pastern joints of the fore leg, and, if the inflammation is not suppressed, it forms bony swellings on the coronet, pastern, and fetlock joints, besides crooking the shank-bone outwards. The animal wastes rapidly away, and soon becomes lame in the hip, when it is generally killed. The cause of this disease, which appears to be an inflammation of the periosteum and softening of the bones, has not yet been discovered.

Promiscuous Cases of Disease.

Congenital Blindness.—On careful examination of a blind female pointer puppy, eight weeks old, both the eyes were found to be of their natural size and formation, but the inner edge of the iris *(Irideremia)* was diseased, and the pupil curiously four-cornered, and very small. There hung out of the pupil a greyish-white fibrous matter, which appeared to be the remainder of the pupillary membrane. Six months afterwards we examined this dog, and found that the pupil was considerably enlarged, and properly shaped; the white skin had vanished: in the back-ground of the eye there was a faint yellow green light, and the dog not only shewed sensibility to light, but also a perception of external objects.

Knuckling at the Pasterns.—A three-year-old brown mare, which had previously fractured the olecranon of the right fore leg, remained, after that the broken bones were set, quite stiff at the pastern, so that, when it walked, it trod only on the toe of the foot, and consequently the fetlock joint was bent considerably forwards. This continued for almost three years, when an empiric undertook the case. He divided the flexor tendon at the pastern; and his treatment was so successful, that, in a few weeks after the operation, the mare was cured, and returned to work. This false position of the limbs also appeared in six other horses, but from different causes. In some it arose from disease of the coffin-joint; but in general it proceeded from relaxation of the tendons, or their thecæ, and therefore must have been treated in a very different manner to the successful case abovementioned.

Roaring dependent on atrophy of the muscles of the larynx:—A grey stallion belonging to a carrier, which was brought to us with severe inflammation of the large intestines, and which we were afterwards obliged to destroy, was a confirmed roarer. On questioning the owner, he admitted that when worked hard his horse had always whistled. On dissecting this horse, we found

that which is, according to Gunther, the principal cause of roaring,—a considerable wasting of the muscles of the right side of the anterior portion of the larynx. Both the laryngeal nerves on this side were, however, only slightly affected, and not visibly altered in structure.

A blister-like Eruption on the Mucous Membrane of the Mouth.—A six-year-old grey Wallachian horse, which had suffered some time under a generally prevailing bilious disorder, had an eruption of yellow blisters over the whole of the mucous membrane of the mouth; a considerable number of circular excoriations appeared, from which exuded a yellow lardaceous substance, so that the whole surface appeared to be covered with pustules. Although these threatened for a time to assume a serious character, yet, by the use of emetic tartar, &c., they were gradually got rid of.

Black Aphthæ on the Mucous Membrane of the Stomach and small Intestine—In several out of the many pigs that died in this year of quinzy were found—besides the usual appearances after death from this disease—a yellow watery fluid in the mediastinum, on the surface of the heart, and in one or the other of the lungs. Also, on the mucous membrane of the stomach and small intestine were a great number of black spots of unequal size, in the neighbourhood of which the mucous membrane was destroyed or softened. These ecchymoses very much resembled those black spots which are seen in the stomachs of dogs that have died rabid.

Fistulæ in the Lower Jaw.—In order to remove these carious affections of the alveolar cavities of the lower jaw, it is always necessary to extract the root of the diseased molar tooth. The experiments made on useless horses, as to the possibility of extracting the back teeth with a well-constructed English key, have always been followed by fracture of the tooth in the jaw.

Palsy of the Tongue.—An eight-year-old black horse was brought to us to be examined, who had, for the last fourteen days, been observed to feed in a very peculiar way. When he had seized his food with his lips and teeth, he shook his head violently, and appeared to have great difficulty in getting it between his back teeth, or on the tongue. On a close examination it appeared that an imperfect palsy of the tongue had been produced by a simple four-cornered bit, and that this was the cause of his strange way of eating. By removing the external cause of the disease the evil soon disappeared.

Obstruction of the Nasal Passages.—The respiration of a twelve-year-old brown cart horse, that had, in the early part of the year, suffered from bilious catarrhal fever, became gradually

so laborious, that at last it could scarcely breathe at all, except through the mouth. On examining the animal we were convinced that the difficulty of breathing arose from the nasal passages being obstructed by masticated food. The clearing out of the nostril by means of a probe rendered the breathing quite easy and natural; but on account of the greediness of the animal, in about twelve or sixteen hours the nose was again stopped up, and the breathing became as bad as ever. All efforts to remove this palsy of the top of the throat were futile, and, before the horse had been under our hands fourteen days, inflammation of the lungs came on, caused, doubtless, by some portions of the masticated food having passed through the glottis into the trachea and bronchi. The appearances after death were somewhat obscure, and we could find no mechanical cause for this affection, either in the nasal or laryngeal passages.

Vomiting of Food in Cattle.—Two draught oxen, which had been employed in drawing clover, devoured too much of it, and were attacked with violent vomitings, which lasted twenty-four hours, and during which an amazing quantity of imperfectly masticated food was thrown up. These vomitings, however, were productive of no bad consequences, for, after they had ceased, the animals were again as well as before.

Violent Diarrhœa, with Inflammation of the Umbilicus.—During this year there has frequently appeared among calves and foals, a violent and, to all appearance, an inflammatory diarrhœa, which, if not suppressed in time, destroyed them. In the post-mortem examination of these animals, the essential difference observable was always an inflamed state of the umbilical artery from the navel to the bladder. The parietes of the bladder were very much thickened and softened, and a collection of matter was found under its peritoneal covering. The only specific and sure medicine to be given to young calves and foals, affected by this disease, is the kali sulphuratum, of which half a tea-spoonful at a time may be administered.

Protrusion of the Rectum.—This disease appeared successively in three young pigs in different sties, and therefore seemed to have had some common cause. It arose, as we afterwards discovered, from obstruction of the intestine. We operated upon them, and one animal was cured; but the others died, one on the third, and the other on the fifth day after the operation—not, however, in consequence of the operation, but from the large intestine having been previously ruptured.

Polypus in the Rectum.—A person who had bought a twelve-year-old brown Wallachian horse, remarked, not without surprise, that after every voiding of dung a fleshy swelling of the size of

a goose's egg protruded from the anus, and, after some time, retracted of its own accord. The horse was brought to us for examination. We found that this tumour was a polypus which grew from the right wall of the rectum, and the connecting surface of which reached to the edge of the anus. The tumour was covered with healthy mucous membrane. It was easily removed, since only the back part of it was interwoven with the fibres of the sphincter ani. On examining it we found that its outer tunic was very similar to the muscular coat of the rectum, consisting of pale, thick, fleshy fibres. The interior contained a quantity of soft matter of the colour and consistence of whey. These peculiar polypi of the rectum, which consist in hollow tumours filled with different kinds of fluid, are not unfrequently productive of very bad consequences to the horse.

Difficulty of Urine, caused by Stones in the Urethra.—A seven-year-old cavalry horse was brought to us which had suffered severely for more than three days from retention of urine. On examining him I found that the bladder was immoderately full, and that the urethra was obstructed by a round hard substance, which was situated about three inches from its aperture. Finding it impossible to extract this substance in the usual manner, we cut through the urethra unto this body, and, by that means extracted a yellow calculus weighing a hundred grains, and the surface of which was very irregular. This being removed, the horse became free from pain; the difficulty of urine was removed, and, ten days after the operation, the wound was perfectly closed.

A truck dog died in consequence of the bladder being distended with calculi to such degree that it burst, and the urine infiltrated even to the skin.

An extraordinarily large bladder was brought to us as a curiosity by a farmer, who stated that he had found it in an ox which he killed because it would not eat. This distention of the bladder appeared to us to be produced by retention of urine; we therefore requested permission to examine the urethra, and we found in it a very large stone.

Ovarian Phthisis.—A fourteen-year-old brown mare having recovered from an attack of the prevalent bilious catarrhal fever, afterwards wasted rapidly away, and voided, from time to time, a slimy matter through the vagina. On post-mortem examination we found a collection of thin watery fluid in the belly, with thickening of the peritoneum and its prolongations; and the right cavity of the ovary, which communicates with the womb, was filled with thick matter.

Inversion of the Womb and of the broad Ligaments.—We have

had three cases of this in the last year, in two of which fatal consequences were united with inversion of the broad ligaments.

1. A three-year-old cow perished in consequence of violent straining in paturition, before proper assistance could be rendered to her. On post-mortem examination it appeared that the impregnated horn of the uterus was half inverted on its axis, so that the head of the young one lay below the pelvis, and towards the left, and the broad ligament was also entangled round this projecting part. Round the tumours thus formed, and which lay near to the os uteri, a portion of empty intestine had slipped, and was in an inflamed state. As for the calf, the fore feet were bent together under the body, and the neck was unnaturally distorted, and bent back.

2. A ten-year-old cow, which, on account of insufficient dilatation of the os uteri, had hitherto never produced a calf without help, was again taken in labour, and with proper assistance was delivered of a calf lying in a false position. Six weeks from that time, and after she had suffered from a slight inflammation of the womb, she shewed symptoms of dropsy, and was destroyed. On post-mortem examination it appeared that the general cause of suffering was a peculiar tubercularity of both kidneys; there were also traces of the right broad ligament having been inverted and knotted together so that it was found to be folded and twisted, and spiral-formed stripes of silver-like fibres were interwoven in its texture.

3. M. Tietze, veterinary surgeon at Reichenau, was sent for to a cow that had already gone fourteen days over the usual calving time, and began to be in very great pain. He found that the mouth of the womb was so contracted that he could scarcely introduce two fingers into it, and the neck was distorted.

He tied her, and, laying her on the straw, rolled her gradually over and over. He found that at each turn the mouth of the womb became larger, and after the third turn he could easily get his whole hand into it. But before it was possible for him to seize the calf, the cow herself pressed it violently out under his hand. The calf was shrivelled and dried up. The cow sprang up as soon as she was released, and seemed quite lively. She did not appear to pine for her calf, and she yielded no milk.

Operations.

Of these 627 were performed in the school:—342 on horses, 119 on cattle, 1 on a sheep, 2 on goats, 23 on pigs, 109 on dogs, 3 on cats, and 28 on poultry and domesticated birds. Of these 544 were successful, 58 were ultimately unsuccessful, and 25 caused death at the moment. Among the latter were operations

on rupture of the womb in a bitch, and on a double laceration of the scrotum in a horse. It should be mentioned that both of these operations were in the course of the year performed with successful results. The cause of the failure in other cases was the compression of the broad ligament in the wound formed by the operation in one animal, and the occurrence of mortification in the other.

Magazin für die Gesammte Thierheilkunde, 1838, *p.* 235.

The Lectures of Mr. Youatt have long, probably too long, occupied a certain portion of the pages of THE VETERINARIAN. He is now arrived at a convenient resting-place, and the physiology and pathology of the nerves of peculiar sensation—the subject next in order—may be deferred to an uncertain, although, perhaps, not very remote period. He would now be anxious to see the early pages of each number occupied by the lectures, either continuous or occasional, of some other teachers. At the commencement of a new course of instruction at the veterinary school at St. Pancras, which he trusts is now assured and not far distant, how many new and interesting points of anatomy, and physiology, and pathology, embracing, for the first time, the wide field of all domesticated animals, will necessarily come under consideration, and how many a pleasing and important lecture might THE VETERINARIAN be made to contain! We shall be most happy to take as copious and as correct notes as we are able of peculiar lectures, or of courses of lectures, without trouble or inconvenience to the lecturer. For those that may be sent to us from other schools north of the Tweed, or across the channel, we shall be grateful, and they shall be inserted with correctness and fidelity.

This, however, has reference only to some change in the earlier pages of our Journal. The body of it will still receive the contributions of our brethren in every part of the United Kingdom, and will chronicle the proceedings of foreign schools; and there, we are happy to say that we have promises of many a contribution from new associates, and assurances of increased zeal from those by whom our pages have been hitherto enriched. In our January number we shall commence our new plan, and we frankly confess that we anticipate much improvement in our Journal, and a considerable addition to the pleasure and satisfaction of our readers.

We can thus far comply with the numerous and anxious inquiries of our Correspondents respecting the measures which have been taken by the English Agricultural Society for the ex-

tension of veterinary instruction, south of the Tweed, to all the objects which it was originally intended to embrace. In the first programme of the Society it was stated that it was one of their objects "to take measures for improving the veterinary art as applied to cattle, sheep, pigs, &c." In conformity with this a Veterinary Sub-committee was appointed, at whose second meeting it was determined that a circular to the following effect should be sent to the governors of the Royal Veterinary College; stating that, "among other objects to which the English Agricultural Society deemed it right to turn their attention, they were desirous of improving the veterinary knowledge of cattle, sheep, swine, and other domesticated animals; and that it appeared to them that, if the governors would consent that there should be established at the College a series of demonstrations on the structure, and lectures on the diseases of other animals beside the horse, this object might be accomplished, and as great an improvement take place in the medical treatment of domesticated animals generally as had already been effected in that of the horse.

"That in order that this improvement should be carried into full effect, every pupil appearing at the examiners' board should be called on to produce a certificate of his having attended these demonstrations and lectures at least twelve months.

"That the sub-committee begged to recommend for the delivery of such lectures, and the conducting of such demonstrations, Messrs. Sewell and Spooner, who had consented to such an arrangement, subject to the approval of the governors.

"That the Society would be ready to defray any expenses that might be incurred in carrying this improvement into full effect; and that the Managing Committee of the Society would be happy, at the close of the autumn, when public business would probably call them to the metropolis, to meet the Governors of the College or any committee of them, in order to inquire into and arrange any minor details."

To these resolutions one individual alone objected. Of the manner in which his opposition was conducted we are not willing here to speak. It may, although we trust that such a proceeding will not be rendered necessary, become the matter of future history.

This letter was sent. Answers were received by the Sub-committee from some of the most influential of the governors, expressing their approbation of the plan, and *their readiness to exert themselves to the utmost of their power in fully working it out.* Other answers, we have reason to know, were received at the College. Of course, we are ignorant of the precise nature of

them; but circumstances have transpired which enable us to form a tolerably shrewd guess at it: for Mr. Sewell is busily employed in preparing such a course of lectures; and Mr. Spooner—now conducting the anatomical demonstrations at the College, so far as regards the horse—will, ere this month's periodical can have reached our readers, have commenced another and distinct course of lectures on the anatomy and physiology of the other domesticated animals.

Ere the close of the present year, we trust that our Veterinary School will have assumed that character which its founders intended that it should, from the beginning, have worn, and that the union between veterinary and agricultural science will be complete.—Y.

RABIES.

THE EVIDENCE OF MESSRS. WHITE, SEWELL, AND YOUATT, GIVEN BEFORE A COMMITTEE OF THE HOUSE OF COMMONS, ON MARCH 26, 1838.

[This evidence will probably be read with some degree of interest. Each witness had a right to his own opinion: but it is rather singular, to use no stronger word, that, at this time of day, these opinions should be so discordant.]

ANTHONY WHITE, *Esq. Member of the Court of Examiners of the Royal College of Surgeons, and Surgeon to the Westminster Hospital, called in; and examined.*

Mr. C. Lushington.—How long have you been in the profession of a surgeon?—Thirty years.

You consequently have had great experience in the various violent diseases by which the human frame is liable to be afflicted, and I have no doubt been frequently present when they have terminated fatally?—Certainly.

Have you ever been present at deaths occasioned by hydrophobia?—I should think from about twelve to fifteen times throughout my life.

Are not the sensations of bodily suffering and mental alarm and anxiety in such cases of the most distressing and frightful character, and frequently very much protracted?—From long experience and observation, I should say there is no disease whatever to which human nature is liable in which such great bodily suffering, distress of mind, alarm, anxiety, and desire to get out of existence, prevail, as throughout that disease.

You have already said you have been present at deaths from that and other causes; what is your opinion of the comparative degree of suffering in individuals dying from other causes, and from hydrophobia?—In acute diseases, the bodily suffering is very great indeed—acute diseases which may terminate life in a few hours, arising from violent inflammations or serious bodily injuries; in such cases, the suffering is great, but it does not bring with it that extreme mental suffering which attends hydrophobia.

Then the complication of bodily suffering with mental alarm and anxiety, renders it, in your opinion, a disease of the most terrific character?—Most decidedly; arising from the perpetual apprehension of something going to occur, of which they can form no conception; but the perpetual apprehension of something further, and of suffocation being about to occur, with an anxiety of mind, which, as I have already stated, is beyond any thing that is the product of any other disease.

Do not the families and friends of the deceased feel with especial keenness the death of a relative under such circumstances?—Most assuredly; it is the most painful disease of all I ever met with.

Such being the lamentable and terrific nature of the disease and its effect upon society, are you not of opinion, that, if the occurrence of hydrophobia can be rendered more rare, an immense benefit will be conferred upon the community?—Most assuredly: probably I may suggest that it has been the regret of the whole of the profession, and, in fact, of thinking people generally, that a stop has not been put to advertized medicines, for there certainly is a remedy, if speedily applied for, which in most cases may prevent hydrophobia; but the common people are led away by the publication of nostrums, such as the Ormskirk medicine, upon which no faith can be put; and they take this medicine to prevent being cured by surgical interference, by the removal of the bitten part. That has been a most mischievous thing, and many people fall a sacrifice to all kinds of medicines, particularly that Ormskirk medicine. I know it, not from my own knowledge, but from having it imparted to me by respectable persons, that many of those who put faith in the Ormskirk medicine, and other nostrums, have fallen victims to hydrophobia. The process of immersion is equally absurd; it amounts to a regular drowning, to which the patient is subject; for, to make it more cruel, they are not content with one immersion, but the process, to make the charm good, must be repeated three times.

Has the disease increased of late years?—I think on the contrary. Cases have not come before the public so frequently of late years as they did from fifteen to twenty-five years ago.

Is the most common cause of the disease the bite of a mad dog?—The most common, assuredly, although other animals become rabid; but it arises from the bite of dogs originally, for I believe it is quite a fact, that the dog is the only animal that has the disease originally, although the cat, the fox, and other animals, may receive it from dogs.

Mr. P. Scrope.—The only remedy you place any reliance upon is excision of the wounded part?—Yes, assuredly; and that may be done at a considerable distance from the time of the bite.

At what distance should you say?—I should say from the time of a person being bitten to the time that the bitten parts become painful, for they invariably become tender: from the time a person is bitten to that when the mental symptoms come on, is usually about six weeks, although there are some instances in which it is carried on for a greater duration of time; it is said, for some years.

Do you mean that, if excision of the wounded part takes place at any period within that time, a cure may be effected?—I think so from observation, and from having repeatedly done the thing.

You would not cauterize the part?—I should not trust to it so much as to excision.

Mr. Hume.—Have you ever tried it after the mental symptoms came on?—Yes.

With success?—No.

Have you ever used alkalies?—Yes; but I have never known any thing effectual after the mental symptoms have come on.

Mr. C. Lushington.—When once hydrophobia has made its appearance in a decided stage, are you aware of any recovery from it?—I am not aware of any case; I never met with any such case in any legitimate or authentic shape.

WILLIAM SEWELL, *Esq. called in; and examined.*

Mr. C. Lushington.—I believe you are Assistant-professor in the Royal Veterinary College?—Yes.

How long have you been so?—Nearly forty years.

You have no doubt acquired considerable knowledge of the diseases of animals?—I have constantly attended to them.

Has your attention been drawn to the increased number of dogs in the metropolis and the suburbs of late years?—Yes.

What do you ascribe that increase to?—To the employment of dogs in carts, which used not to be the case.

Are you aware that establishments of dogs exist, where they are kept to the number of thirty or forty, for the purpose of being let out in the course of the day to draw carts?—I was not aware of that.

You have no doubt heard that dogs so used are exposed to very cruel treatment?—I have very often seen it.

Do you suppose that a frequent consequence of such ill treatment is hydrophobia?—I am certain it is: abuse, over-exertion, bad diet, heat of weather, and all those causes which would induce it in many other animals, will cause hydrophobia in dogs. When bullocks are over-driven, they become rabid: we do not consider it is hydrophobia, because they have no dread of water; on the contrary, they will drink very freely; it is rabies. I have never seen a case of hydrophobia amongst such animals, as they will drink very freely: it is rabies or canine madness in all.

The bite of dogs will lead to hydrophobia?—Yes, I have known this in the human species, or persons bitten by dogs not known to be ill, but which afterwards became rabid.

Has it come to your knowledge that valuable sheep and cattle have been destroyed in consequence of having been bitten by rabid dogs, the disease of hydrophobia having been communicated to them?—Yes, the disease of canine madness, not hydrophobia.

What is the distinction between canine madness and hydrophobia?—It is considered hydrophobia when they have a dread of water: canine madness is where there is a poison communicated to the animal by a dog or fox, or any of the feline species.

Are the consequences the same?—Yes, precisely.

Have you ever known cases of that character ending in recovery?—Not a single one.

Then a great deal of valuable property must be destroyed?—A great deal annually, horses as well as sheep and cattle.

Mr. Hume.—It is incontestible that dogs communicate the disease; do horses, sheep, and cattle propagate it?—I do not believe they can. I have tried the experiment by inoculation with their saliva upon rabbits, but have never been able to communicate it; and so with the human species. I inoculated rabbits and an ass from a poor woman on the day she died of the disease.

Have you ever inoculated any animal from a dog under the paroxysm of the disease?—Yes, several.

What has been the result?—It has not produced it.

Then is it your opinion that the virus communicated by inoculation from any animal will not produce the disease in another?—I have not been able to do it, and, judging from my own experiments, I do not believe it does.

Then do you believe that it is the bite alone, and the laceration attending it, which produces the disease?—Yes, the experiments lead me to that conclusion.

Have you had many instances of horses dying in your hospital?—Yes, and out of it, out-patients; one not more than three weeks ago. Mr. Cubitt, the builder, of Belgrave Square, lost a very fine horse from the bite of a dog.

Are the symptoms attending the disease of hydrophobia in horses the same as in man?—Yes; it is more distressing than any other disease in the horse, even tetanus or lock-jaw, and phrenitis or brain fever.

You mean that the convulsions in the patient are greater than you have seen in any other disease?—Yes, much more distressing or agonizing.

Do they invariably die in convulsions?—Generally; but they have occasionally paroxysms so severe, that they become exhausted, and die tranquilly; there are periods of suspension from those violent symptoms, in which they may be managed, but during the paroxysms they bite and kick, and are quite unmanageable.

Is it your opinion that during these paroxysms they are quite insensible of what they are about?—Yes: it is an uncontrollable ferocity; differing from that produced in persons by drunkenness or disease, by a sudden return to calmness and obedience.

Have you seen any cases of severe tetanus?—Yes, many.

Are the symptoms attending hydrophobia nearly similar, or of the same kind that attend tetanus?—Very like; but you have a remission of the paroxysms, which is continual in tetanus.

Have you ever observed the same rigidity of the human frame in hydrophobia as in tetanus?—I have seen persons convulsed in hydrophobia in the same manner as the horse is.

What is your observation as to the frequency of the disease now, compared with former periods?—I have heard of more within the last two years; for some years I never heard of a case, up to twenty years past.

In cattle you mean?—In horses, sheep, and cattle in and about London.

Can you account in any way for the more frequent occurrence of that disease now than formerly?—I think that this arises about London from the employment of dogs in carts; they are over-exerted, which brings on fevers, and whenever they have any attacks of fever, they are exposed to rabies from fatigue, and the pain and irritation of the feet, and abrasions and galls from the harness.

You have frequent communications, I presume, with those who have been your pupils at the College, who are now in different parts of the country; have you ever inquired of them how far the disease is more frequent in distant parts of the kingdom than formerly?—I have not. I have wished to have sheep and cattle that have been bitten conveyed to town, in order to watch the progress of the disease, and endeavour to find out a remedy; if the Committee will allow me, I will shew them some drawings of the appearance of the brain and spinal marrow in the human species, and also in horses after death from this disease.

[*The witness exhibited the drawings alluded to.*]

You have now exhibited drawings shewing a high state of inflammation in the spinal marrow of horses and in the human species, where death has been the result of hydrophobia; is it your opinion that any irritation and heat which

may produce fever in dogs, may endanger the spreading of that disease?—Yes; whatever produces fever.

Then, is it your opinion, that the practice which has for a considerable time existed in the metropolis of exposing dogs in carts to severe labour and cruel treatment, has tended to make the disease more frequent?—Yes, I think so, from having had dogs brought to me within the last few months, to know what was their complaint, some dead and some living. I have always inquired whether they have worked; and it has frequently occurred that they have worked in carts, which was, no doubt, the cause of the disease.

Mr. C. Lushington.—Is it your opinion also that depriving dogs of a supply of suitable food drives them mad?—If they have crude, indigestible, improper food, the stomach becomes disordered; and I have very often found that the disease originated from crude or improper food.

And the disease is therefore more likely to occur in dogs among that class who are not capable of giving them proper food?—Yes; I have found it most frequent among those that live upon improper food.

Then the Committee may collect from your evidence that you consider the employment of dogs in that way, in carts and so on, as a public nuisance?—Yes, undoubtedly it is.

Would not the industrious classes justly complain, if the employing of dogs in carrying burdens were suppressed by legislative enactment?—Yes; I think if you could satisfy people that the dog was never intended by nature for draft, they would be more inclined to suppress it. Dogs not having hoofs, cannot be shod; their feet being soft, they are often cut and lacerated by the stones in the roads and streets. It would not only be less cruel, but less inconsistent to work sheep and goats, as is done sometimes, not on account of their feet being better defended, but their more compact form. When done with, or the season being over, they, as well as oxen, might be fatted, and used for food; but, what is most important, the risk of hydrophobia in man, and rabies in animals, would be avoided.

Are you aware whether the tax is enforced upon dogs among that class of persons?—I am not aware.

Are you aware whether it would be worth their while to pay the tax for those dogs?—I do not know; many make their living by carrying about wood, vegetables, and various kinds of ware.

Mr. Hume.—Is it your opinion that an increased attention on the part of the police could check in any degree that ill usage which you say produces that fever, or tendency to madness, which you describe in dogs?—Yes; and I think that might be done, provided they were brought within the enactment of Mr. Martin's Act against cruelty to animals.

From your examinations of the dogs that have died, is it your opinion that bad food, as well as severe treatment, tends to produce hydrophobia?—Yes; whatever will induce fever and affections of the brain and nervous system.

Mr. C. Lushington.—Are you aware of any cases of hydrophobia at present in the hospitals in London?—I am not myself aware of any at present; I read of cases in the various medical journals, and I have seen them.

Mr. Hume.—Can you state any means by which the tendency to hydrophobia could be lessened, and the danger of its many consequences removed?—Yes; by diminishing the working of dogs. You cannot put a stop to it quite, but some means, either by remonstrance or rewards, might be used to diminish it. I have forbidden several persons coming to our premises for the sale of their articles with a dog-cart. Other persons might do the same; and this becoming a general practice, the number of these conveyances would be materially lessened.

By preventing that ill-treatment you have alluded to?—Yes; more acci-

dents occur to horses from their being frightened by dogs running under their legs, or under the vehicle, and biting them, than from any other cause. Coming down here this very morning, I met with an instance of it in my own chaise; a dog, in crossing Portland Street, ran under the horse's legs.

You speak of it now as a nuisance in the streets?—Yes.

And in that point of view, you think the police, if possible, should prevent such accidents?—Yes; and they could do so if the drivers of the carts were to be kept with them. Very often a driver is many yards distant, and is whistling and calling the dog, instead of leading him. Last week I saw a poor child, leading a puppy, seized and bitten by a dog in a cart, a considerable distance from the owner; and he might have been worried to death had not some person been passing near.

Mr. P. Scrope.—Taking into consideration the danger to the health of individuals from hydrophobia, and also the nuisance and obstructions to carriages from dogs driven upon the highway in carts, is it your opinion that the practice of driving such carts should be put an end to altogether?—Yes; but I should think it would be difficult to do it among the lower classes.

Do you think the dog is so unfit to be a beast of burden that his being so exployed is a cruel act?—Most decidedly; and that all reflecting and considerate people, who had begun, would discontinue it, upon being made aware of the fact, or if they have ever seen a case of rabies in or out of their own family.

And therefore, without any proof of gross ill-usage, the very fact of employing a dog in a cart, you think is a cruelty within the limits of Mr. Martin's Act?—Yes; it is a cruelty, because the animal is unfit for the employment. His frame, and suppleness or flexibility, shew that by nature and habit he is unfit for it.

Mr. W. Youatt, *Veterinary Surgeon, called in; and examined.*

Mr. Hume.—How long have you been a veterinary surgeon?—Twenty-six years.

Have you heard the evidence Mr. Sewell gave respecting the frequency of hydrophobia from the bites of dogs, as regards horses and other animals; and will you state how far you agree with or dissent from what he has stated?—In the course of twenty years' practice, I have seen more than a thousand rabid dogs, and too often witnessed the mischief which they have done. One case may, perhaps, be in the recollection of the honourable member. In 1825 a mad dog ran down Park Lane, on a Sunday afternoon, when the Park was fullest, and in his short course down that road he bit five horses and a great number of dogs. Four of the horses died, and one was saved by the severe application of the caustic. I have known more than forty sheep bitten by a single dog, all of them dying rabid. One farmer lost no fewer than twenty-five cows in the same way. These are certainly rare cases, but they serve to illustrate the mischief which is occasionally done by dogs labouring under rabies.

Is the loss from cattle being bit more frequent during late years than formerly?—I should say decidedly so.

To what cause do you attribute that?—To the increased number of rabid dogs.

Can you state any cause for the increase of that disease?—From the more frequent instances of dog-fighting, and the practice, which has much increased, of training fighting dogs—dogs which are naturally ferocious, and more likely to do mischief—more of them than usual, by neglect or accident, became bitten.

Mr. C. Lushington.—Some years ago, when you were examined before the Committee for inquiring into the cruel treatment of animals, a great deal of evidence was given with regard to receptacles systematically kept for the fighting of dogs; have not they been put down by that Act of Parliament?—Publicly they have, but privately they exist to a greater degree than they did then. There are low public-houses to which those persons resort, and which have private conveniences behind, where these brutalities may be carried on unknown, except by those who are in the habit of taking part in them. There are also dealers and others, at whose places dogs are kept by young men, who ought to know better, for the express purpose of fighting.

Cannot the vigilance of the police extend to those places?—I should say that it ought; but to the fact I speak without any hesitation.

Mr. Hume.—Have you observed of late, that dogs have been more used in carts and other out-door work than formerly?—There are more dog-carts about than there used to be three or four years ago.

And do you attribute the more frequent occurrence of loss of life and property by hydrophobia to the ill-treatment of these dogs, or to what cause?—In my opinion, rabies is produced by the saliva of a rabid dog, or a rabid animal, usually introduced into the system by means of a bite. This is the sole cause of the disease.

And the question is, whether you can assign any reason why that disease has been more frequent of late than formerly?—I would give two reasons; first, the greater number of dogs kept for the especial purpose of fighting, and the increase of that particular breed of dogs; and, secondly, the dogs employed in carts having a portion of that breed about them, are frequently not only kept for the purpose of drawing carts, but for fighting, and consequently are naturally disposed to do mischief.

Can you suggest any mode by which the danger arising from these practices can be put down?—I can add but little to what a former witness stated. If you insist upon every dog-cart being licensed, and having a number, with the name and residence of the owner in letters an inch long upon the cart, you would be, in some measure, enabled to trace many of them, though, perhaps, not all.

You have stated that the practice of dog-fighting continues notwithstanding legislation to the contrary; have you of late witnessed any of those acts of cruelty where dogs tear each other to pieces, which you stated before the Committee of 1832?—I have not been present at any of those scenes; I do not speak from personal knowledge, but from a perfect assurance of the fact.

But do you believe that the same cruel system of making dogs fight until they tear each other to pieces, which you stated in 1832 of your own knowledge, still continues?—I do; and that it is increased.

Do you believe the state of excitement to which those dogs are driven at such periods tends to produce this disease of rabies, or canine madness?—No.

Then in what way are they injurious?—They are more disposed to be quarrelsome than other dogs, therefore they are more likely to be bitten, and to communicate the disease. They are exposed to the common hazard of being bitten, and, when rabid, their ferocity is fearfully increased, and a bull-dog, or bull-terrier, or a dog of any similar breed does twenty times the mischief that a dog of a quieter disposition would.

Mr. C. Lushington.—You are understood to say that dog-fights do not produce canine madness?—Indirectly they do, by encouraging a particular breed of dogs.

Then, do you believe that canine madness is confined to any one particular class of dogs?—No.

Then what class of dogs do you allude to, which dog-fighting encourages?—The bull-dog and terrier, and every grade between the two.

Mr. Hume.—Are you able to suggest any thing to the Committee by which the number of these dogs, which you state to be injurious to society generally, could be reduced?—By laying a heavy tax upon them; and when they are used for the purpose of draught, by compelling the owner of each dog to take out a license.

Is it your opinion that the ill-usage of dogs, the exposure to heat, and want of food, can produce in any dog the disease of rabies, which is so dangerous to other animals?—No; but I think that in common humanity you ought to take means to put an end to such horrible atrocities.

Is it your opinion that that which produces rabies in dogs is a virus similar to that of small-pox, which lies latent, and can only be communicated from one to the other by inoculation, and cannot be produced by any ill usage?—That is my firm belief.

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MR. SPOONER'S INTRODUCTORY LECTURE ON THE ANATOMY AND PHYSIOLOGY OF DOMESTICATED ANIMALS.

[We hasten to place upon record a portion of the first Lecture, by an officer of the Royal Veterinary School of St. Pancras, on "the Anatomy and Physiology of Cattle, Sheep, Swine, Dogs, and all other Domesticated Animals"—a subject hitherto neglected at that institution.

We inquire not into the circumstances—of the possible existence of which its founders never dreamed—which led to the injurious and protracted exclusion of the most valuable portion of veterinary instruction. Let these occupy the inquiries of future historians, who will speak of them dispassionately and justly; or, rather, with our will, the object, which from the earliest period of our connexion with the veterinary profession we have had so near at heart, being at length accomplished, let them be consigned to utter oblivion. It is sufficient for us, that our art will now be extended to all its legitimate objects; and that it will be identified with the best interests of our country, and with the claims of humanity. It is sufficient that the first step has been taken, in which every friend to our profession will exult, and which no enemy can recall. It is sufficient that that improvement is commenced which, with greater or less rapidity, will be worked out to its full and perfect measure. There is not the power upon earth that can now, and there soon will not be the heart that would wish to, check its glorious career.

We hasten, then, to record the first Lecture; and we congratulate our friend Spooner that this honour has fallen upon him. Yet it was not meant as a formal and laboured introduction to his subject: that, to a considerably greater extent, he reserves for the Oration which he was previously pledged to deliver at the

first meeting of the Veterinary Medical Association in the Session 1838-9. It was an earnest appeal, and one that will make its due impression, to the kindness and candour and support of his fellow-practitioners. It was that which a man who feels all the importance of the new, and difficult, and extensive and boundless inquiry which he was about to institute would attempt. It will not be made in vain, but the good wishes of every honest heart will be with him.

We trust that we shall be enabled often to allude to particular portions of his Lectures, and that, at no distant period,—probably in the course of another year,—we shall be permitted to give a continuous course of them.—Y.]

"On looking around me, and finding that my present auditory consists principally of gentlemen whose countenances were familiar to me when I was engaged in delivering other lectures, and of those who are just commencing the study of the veterinary art, I feel that it might be well presumed that I should be able to address you with a portion of that confidence which is eventually gained by the practised teacher; or, at least, that I should be divested of that trepidation which, while it is painful both to the auditor and the lecturer, renders the latter totally unfit to do justice to the task which he has undertaken: yet believe me, that if there ever was a time when I was compelled to throw myself on your kind indulgence, it is now. I have presumed to come before you in a far different character from that in which I have hitherto appeared,—no longer as a teacher of the anatomy and physiology of the horse alone—although I was then fully aware of the extent and the difficulty of my subject, and of my own incompetence—but venturing on a wider, a nobler, an almost untrodden field of investigation, the anatomy and physiology of the ox, the sheep, the swine, the dog, in fact, of every domesticated animal. You will not doubt me when I say that I contemplate the task which I have undertaken with a degree of trepidation which almost unmans me.

"I know not whether these feelings are increased, or whether I ought not to feel encouraged and flattered, when I make my first essay in the presence of one who almost alone has ventured to tread this path, and has successfully trodden it—whom I regard as my former and respected preceptor, and whom I can now challenge as my sincere and valued friend. I am, indeed, thankful and delighted to see him here on this my first day of trial.

"There is another gentleman whom I have long proudly classed among my choicest friends, and who has done much for the veterinary art—whose lectures are essentially connected with the pre-

sent improvement and the future welfare and advantage of the student, and will become more and more so, now that the practice of the veterinary surgeon is rapidly extending to all its legitimate objects. There is nothing more closely interwoven with the creditable and successful practice of your profession, than the science of chemistry. I am thankful to see him here to-day. To my brother practitioners who come to support and to cheer me on this occasion, I beg to return my warmest thanks. I feel all the importance of the subjects which I shall have to discuss, and the kindness of my friends, while it gives me additional zeal, imposes on me likewise additional obligation.

"As I proceed to describe the structure of our various patients, and the functions of every part, you, as you follow me, will be more and more convinced of the importance of this branch of our art; and therefore you cannot be surprised at the anxious feelings with which I now address you. Bear with me—take, as far as you consistently can, the will for the deed, and these imperfect lectures will not have been attempted in vain.

"The anatomy and physiology of our domesticated animals! It is a wide, an interesting, and a noble field of investigation. The varied structure and functions of each, and its beautiful adaptation to the particular purpose which that animal was designed to fulfil. We shall have much to admire here—much to impress us with a deep sense of the wisdom and the goodness of the great Maker of all. Each animal, as he passes in review before us, will be perfect after its kind. It will differ from others whom we have domesticated, and from whom we derive much advantage; but it will be perfect in itself—every slight variation of structure will be an exemplification of wondrous skill. I cannot conceive of a subject more interesting.

"If we consider it in a less but still a very important point of view, as connected with individual or national wealth, we cannot but wonder that this important branch of science has been so much neglected among us. When the Veterinary College was first established, its institutors had in view not only the instruction of the pupil in the knowledge and treatment of the horse, but of every domesticated animal. This cannot be for one moment disputed. These objects, however, have not been fully carried out. There was one man, indeed, who came forward as a teacher, professing to occupy, and honestly occupying, this true and proper ground, and by his exertions as a lecturer and a writer much valuable information has been elicited with regard to this most important branch of veterinary science—the treatment of other animals beside the horse. The student will never rise from the perusal of the various works of this indefatigable man without

feeling his mind expanded, and being better prepared for the practice of his profession*.

"My task in the course of these lectures will be confined to the anatomy and physiology of these animals, and as preparatory to other instructions on their diseases by another gentleman, highly competent to the task, and who is ever industrious in the pursuit of his profession. I allude to Mr. Sewell, whose intention it is, in his next course of lectures, to enter more fully than he has hitherto done into the consideration of the diseases of these animals. He is a man of whom I need say little in order to impress your minds with deep respect for him; for he is always at the post of duty, always ready to impart instruction, and the kindness and urbanity of whose manner every pupil will gratefully acknowledge—[Mr. Sewell at this moment entered the theatre, and was received with much applause].—The demonstrations relating to the horse will be conducted, as usual, in another place, and there you will have an opportunity of preparing yourselves for the still superior instruction to be derived from the scientific lectures of Professor Coleman. By him, and by Mr. Sewell, the anatomy, physiology, and pathology of that noble animal the horse will still be satisfactorily taught, while here or at the College I shall be employed in the humbler but still important office of laying that foundation on which the noble superstructure of your future studies and acquirements, and usefulness and reputation, must be built. No portion of instruction hitherto given will be neglected, while that will now be added which alone was wanting to enable the veterinary surgeon to occupy with credit to himself and advantage to his employers his proper station in life. Happy will they be who are now employed in linking together the various constituents of veterinary science hitherto disunited, and laying broader and deeper the foundations of our noble art. If I might venture on a description of that which your acquirements and our profession ought to be, I would liken them to a noble cone, which has anatomy and physiology as its basis, pathology and practical surgery as its centre, and chemistry as its apex. Without the combination of all of these, and in their just and full proportions, the massive structure, let it tower as high as it may, would lose all its grandeur, its beauty, and its stability."

Mr. Spooner then proceeded to say, that, considering how soon

* There is a gentleman who, as a practitioner and a writer, trod this path before Mr. Youatt, and to whom the veterinary pupil for many a year to come will acknowledge himself deeply indebted,—Mr. Blaine, the demonstrator to Sainbel, the author of the "Veterinary Outlines," and the father of Canine Pathology.—Y.

a portion of his class would have accomplished the period of their residence at the College, and being assured that he should not in the slightest degree compromise the interests of those who were commencing their studies, he should venture to begin with one of the functions of life, and a very important one, digestion ; and he drew a rapid, but accurate and satisfactory sketch of the structure of the organs of digestion in the different domesticated animals, curiously and beautifully varying in each, according to the situation in which he was to be placed, and the destiny he was to fulfil : a more elaborate description of these was to form the subject of succeeding lectures. We will not attempt to follow him here, because we entertain a strong suspicion that in another, and, probably, the next, session, we may be enabled to present our readers with a continuous course of these lectures. We shall, however, occasionally glance at certain points in them of more than usual interest, or with regard to which Mr. Spooner may possess peculiar views. He concluded by again appealing to the candour of his hearers, who, he trusted, would not forget that he was treading a new path, and occupying a new division of veterinary science. While he pledged himself that he would anxiously, thoroughly, devote himself to the execution of his task, he trusted that they would exercise much candour towards him, and consider that he could not be at once perfect.

TWO FATAL CASES OF INTERNAL ABSCESS.

By Mr. J. W. Mayer, *Newcastle-under-Lyne.*

If there is one part of veterinary surgery more important than another for the veterinary surgeon to be accurately acquainted with, it is the theory of inflammation—its causes, symptoms, treatment, and terminations ; affecting, as it does, all tissues—arrested by no season of the year—defying the utmost skill of the practitioner to arrest its progress, and too often destroying life.

Much has been done in the investigation of this important branch of surgery ; but in the causes, symptoms, and treatment of the termination of inflammation many points are open for further investigation. The susceptibility of certain parts of the body to take on diseased action, and the methods which Nature takes to relieve herself, are subjects not only for the curious, but they are of essential interest to those whose duty it is to be the willing assistants in Nature's operations.

I am led to make these preliminary observations, in order to bring before the readers of THE VETERINARIAN one important termination of inflammation, which is called suppuration. Suppuration has been defined to be, that morbid action by which pus is deposited in inflammatory tumours occurring in any part of the animal frame. If we are asked, What occasions this morbid action, and by what symptoms should we distinguish the secretion of pus in internal organs from other fluids? How do we know where and when it is formed, and what is the treatment we should adopt in order to get rid of it? To what veterinary work should we direct the anxious inquirer, in order that he might obtain satisfactory answers to these questions? We should be at a loss to give a satisfactory reply. Although we know that pus is secreted from the blood, and that, practically, it is an effort of nature to relieve the excessive inflammatory state of the part, and we can tell from the symptoms and feeling of external tumours that pus is formed, and in this case can easily perform a cure by opening the abscess and suffering the fluid to escape, yet, if pus forms in any internal organ, by what symptoms are we able to judge of its existence?

It is not my intention in this paper to enter into the solution of these and many other like questions. They are interesting, and can only be solved by those who possess practical experience, and have given the subject much observation. I merely hazard these remarks in order to excite the attention of others; and content myself with placing on record two fatal cases of abscess in the internal organs, with the hope that the symptoms which occurred may be some guide to other practitioners.

In the month of August 1837, I was requested to look at a horse that had been unwell several days from catarrh; little notice, however, had been taken of him, it being thought of no consequence, and he was turned out to grass. On fetching him from the field, one day, for work, his breathing was found to be so bad, and he had such an inability to move, that his owner became alarmed, and eagerly sought for some assistance. On my examining him I found that he was labouring under all the symptoms of a violent attack of pleurisy.

The most energetic remedies were adopted in order to check the inflammation, and apparently with success. His breathing became relieved, his appetite improved, and his pulse was less frequent: still there was a peculiar anxiety of countenance, and a variableness in the temperature of the body.

On percussion there was a dull sound accompanied on one side by a complete cessation of the respiratory murmur through a considerable portion of the lung. He continued in this state two

days. On the evening of the second day I was sent for in great haste. The horse had been suddenly attacked with a shivering fit, the respiration was increased, and his appetite was totally gone. On the administration of spirit. æth. nit. with other febrifuge medicine the shivering ceased, and the breathing became more calm.

On the following morning I plainly perceived that it was all up with my patient. There was a peculiar agonized expression of the eye, a heaving of the flanks, a succession of shivering fits alternating with increased heat of the temperature of the body, and all betokening the mischief that had taken place.

On applying my ear to the chest, I directly perceived that the sound was different from what I had heard the day before, and different from that which is usually heard in cases of hydrothorax. It was a dull heavy sound, something like (if you will excuse the simile) that which is heard in the act of churning when the butter is beginning to form; and it directly struck me, that there was either a considerable quantity of coagulable lymph or pus formed here. He died on the following day. The result justified my surmises, for, on opening the chest, the lungs were seen to be much reduced in size, and adhering to the pleura costalis. The space between them, the diaphragm, and the walls of the chest, where they were not united by coagulable lymph, was made up of sacs which contained a very large quantity of thin purulent fluid. There were likewise several abscesses in the right lung, which was in a state of gangrene.

The next case was that of a horse that was said to have been ill a fortnight of the influenza, but for which he had had no professional assistance. When I saw him he exhibited the following symptoms,—a staggering, reeling gait, and partial blindness; when he was moved, he fell, and went heels over head; loss of appetite; pulse oppressed and slow; breathing not much affected, and bowels constipated. He continued in this state from two to three days, notwithstanding that he was largely bled, blisters applied to the head, and setons under the jaw. Then delirium came on, and he laboured under all the symptoms ascribed to what in olden times was called mad staggers. Copious depletion was again had recourse to; he dropped, and was unable to rise; and, as the last act of kindness, was destroyed.

On a post-mortem examination, the lungs were found to be in a gangrenous state and tuberculous. On examining the head, the right hemisphere of the brain was found to be enlarged, and, on cutting into the posterior portion of it, a large collection of very thin pus escaped, which accounted for all the peculiar cerebral affections.

From these two cases it may be remarked, that, in the formation of pus in internal organs, there are or may be the following symptoms:—increased fever, exemplified by quickened pulse and breathing; skin alternately hot and cold, accompanied with rigors. If it occurs, as in the latter case, upon the brain, the symptoms are somewhat different, on account of the consequent pressure upon that organ. If we had been able to watch these cases from their commencement to their termination, we might, perhaps, have traced distinctly, first, the symptoms of congestion of the brain, and then those which would indicate the formation of pus.

I send you these imperfect remarks, hoping that they may lead to more extended inquiries on the subject.

You, I trust, continue to enjoy good health; and should Providence bless you with that inestimable gift, the signs of the times are evidently such that you will at length see that change in our profession which will gladden the heart of every well wisher to it. I confess that I read, with more and more interest, every number of your Journal, on account of the information which it contains of the steady and, now, rapid advancement of veterinary science.

GENERAL REMARKS ON FIRING, DISEASE OF THE HOCK-JOINT, PUERPERAL FEVER, AND RED-WATER.

By Mr. S. V. Gregory, *Sherborne.*

I have for a long time intended to make a few general remarks on some veterinary subjects, with the view of inducing some abler pen than mine to follow them out. Since The Veterinarian has published the debates of the "Association," it has become doubly valuable; and my attention has often been directed to subjects that would have otherwise been neglected, by some remark that occurred in these discussions.

Mr. Turner, in my humble opinion, well deserves the thanks of the profession for his admirable defence of the firing-iron. For several years, in a great measure, I have discarded the operation from my practice—I mean as to light, pretty-lined, comparatively useless, firing; but in cases where I consider the iron to be actually required, I have not hesitated to fire, and that deeply; particularly in cases of osseous deposition between the large and small metacarpal bones, and where the enlargement in-

terferes with the functions of the suspensory ligament, or the flexor tendons, or perhaps both, I have given one stroke, and that into the seat of mischief. Also in that accident, of such frequent occurrence, of a rupture of some of the fibres of the suspensory ligament near its insertion into the sessamoid bones, either internal or external, or, perhaps, both ; and in either of which cases I believe the periosteotomy knife of Mr. Sewell would be of no service.

The discussion between Mr. W. C. Spooner and Mr. Dick has no doubt called the attention of many brother vets to the subject of diseased hock-joints, and at the present time I have a case under treatment that I have no doubt is disease of the joint formed by the tibia and astragalus. I had one some months since that yielded to the means applied, but I have not had an opportunity of examining a hock that was in a state of disease of that joint, and that I had known the previous history of. I should think that there are very few readers of THE VETERINARIAN, judging from the papers Mr. Spooner has often written, who think him incapable of distinguishing between a sound and an unsound joint. I also think that Mr. Dick was a little too sarcastic in many of his remarks. He should have shewn somewhat more courtesy; for all veterinary surgeons cannot be professors, and, even if they were, they could reap very little benefit by the professorship without a class. How will Mr. Dick treat Mr. Ferguson's paper in the present month's VETERINARIAN (October) on the same disease of the tendons?

With respect to puerperal fever in cows, I must acknowledge myself greatly indebted to Mr. Friend, and with most of his views I perfectly coincide. It is not by any means a common disease about this neighbourhood. I have not had more than three cases these last four years, and have not heard of more than two others hereabouts. One case recovered, as I considered, by the use of croton oil, which I gave in doses of fifty drops, and, as far as I can recollect, I gave five doses in two days.

With respect to croton oil, I beg to remark, that, in consequence of once taking a drop myself on a bit of bread, and its causing such a burning sensation about the throat, I have always given it since mixed in linseed oil, and have never observed the least unpleasant effect.

One case of puerperal fever being a remarkable one, I will give you at length. On the 20th day of January, 1837, I was called about two o'clock P.M. to see a very large and favourite cow belonging to E. Newman, Esq. She had calved the morning before at six o'clock, and, during the whole of the day, appeared to be doing well, but, on the next morning she did not give her milk as usual. Being a favourite, she had been supplied

plentifully with bran mashes with oats in them. At two o'clock the servant found her down, and then called me. I saw her in five minutes afterwards. On inquiring, the servant told me that he did not recollect that he had seen her chew her cud the day before, but would not have thought of it if I had not asked him. I bled her largely, and gave her two pounds of linseed oil, fifty drops of croton oil, and ginger one ounce; and blistered the back. At six o'clock I repeated the linseed oil and ginger.

She appeared to be doing remarkably well up to one o'clock on the following day; in the morning of which I had given one pound of Epsom salts, and half an ounce of ginger. At two o'clock, twenty-four hours after I had first seen her, I was called in a great hurry: I went at once, and found the abdomen immensely distended, and the cow nearly dead, as I thought. I plunged my knife into the flank, thinking to let out the gas, but scarcely any escaped. I enlarged the opening, and some old rope first made its appearance. The surgeon who attended the family being present, I represented the case to him, and told him that I imagined it was a hopeless one, but that I wished to do all that I could. I enlarged the opening so as to get my arm in, and removed more than two bushels of such a mass as I should only expected to have found in the stomach of a rabid animal, consisting of old rope, tow, sticks, leather, twine, dock-leaves, &c.; indeed, it seemed as though she had been collecting all the filth of the back yard.

Having taken out all I could, I poured a pailful of warm water into the rumen, with some oatmeal flour, not forgetting another dose of oil; I also first sewed the stomach up and then the flank. Three hours afterwards she appeared much better, and lifted her head up, but she died that night about ten o'clock.

She appeared much relieved before I had taken half what I did away; but although it turned out at last of no service, yet, as the case was otherwise a hopeless one, I consider that I was justified in doing as I did. If any brother Vet has met with a similar case, I hope he will not think it too much trouble to send it to you for publication: it may lead to something in that particular disease that has not met the attention of the profession generally.

Red-water does not occur very frequently in this neighbourhood, and the farmers are in the habit, generally, when it does occur, of treating it by drenching the bullock with about a gallon of a strong decoction of nettles in which half a pound of common salt is dissolved; and I believe they invariably cure it by that means, not having heard of a fatal case since I have lived here, and that being more than six years. I, like yourself, believe it to be a disease of the digestive organs.

ON DISEASED OVARIES, WITH ASCITES & OBSTINATE CONSTIPATION OF THE MANIPLUS IN A COW.

By Mr. Joseph Carlisle, *Wigton, Cumberland.*

On the 22d of September I was requested to attend a four-years-old cow, between the short horn and Irish breed, and three months gone with calf, belonging to Mr. Clark, of Bushgill Head, near this town.

The *symptoms* were as follow: pulse 63, and feeble; respiration accelerated; the vessels of the conjunctiva very much injected, and great abdominal distention. The roots of the horns and the extremities indicated intermitting fever: she was continually looking round to her sides; there was a singular curvature of the lumbar region of the spine; a peculiar snatching up of the hind legs; the urine was scanty, muddy, and, when voided, it was with considerable pain; there seemed also to be occasional colic pains, and the bowels had not acted for the last two days.

Treatment.—My first and grand object was to overcome the constipated state of the stomachs and bowels, and, therefore, I gave her twelve ounces of the Epsom salts, with a drachm of the farina of the croton nut, two drachms of ginger, and an ounce of the spirit of nitrous ether. By the aid of an enema syringe I also injected six quarts of warm water, in which I had previously dissolved a pound of the sulphate of soda. The injection was accomplished with considerable difficulty, and the cow evidenced great pain during the operation, and made several attempts to force it back. We, however, managed to have it retained for a considerable time, and, when ejected, it brought away a quantity of slime, but no fæces. I abstracted about three quarts of blood, when the animal unexpectedly exhibited symptoms of syncope. I ordered a rug to be laid on her back, a free allowance of tepid water and gruel, and to be well bedded down with litter.

23*d.*—Pulse 68, and of a feeble character; no inclination to feed; the abdomen distended; the respiration laborious; great depression; and the bowels still obstinately constipated. I administered a quart of castor oil, fifty minims of croton oil, two ounces of jalap, and an ounce of the spirit of nitrous ether; I also threw up another injection. A quantity of slime came away, but no fæcal matter. I ordered her to be drenched several times during the day with gruel and melted butter.

24*th.*—A messenger arrived for more medicine, as the bowels had not acted, and there was little alteration in the symptoms.

The same purgative medicine was sent, with the addition of six drachms of Barbadoes aloes and two drachms of ginger. This was administered at nine A.M. I saw her at three P.M. Pulse 72, and very feeble; great distention of belly; and respiration more hurried. I applied my ear to the parietes of the abdomen, and not the least sound could be detected. I informed the owner that I had no hope of saving her, and, if he had any thought of calling in farther advice, the sooner he did it the better. I, however, gave her two drachms of the croton farina combined with one drachm of the carbonate of ammonia, and the same quantity of the chloride of lime, and left her.

25th.—The owner sent for Mr. John Relph, whose reputation and pathological knowledge of the ruminant stands high, and, indeed, he may truly boast of few rivals. Just as he arrived the poor animal died.

Mr. Relph called on me, and I proposed a post-mortem examination. It was agreed to, and the following abnormal appearances presented themselves:—On laying open the abdomen we were surprised at the enormous quantity of aqueous fluid, of the appearance of whey, that rushed out of the first incision—there must have been at least six or seven gallons of this fluid. Several pieces of a substance resembling adipose matter came floating out with it. We were next struck with the singular appearance of the omentum: it had assumed a ligamentous structure, of a pale yellow hue, and about the thickness of an old shilling, and completely involved the whole abdominal viscera. It had every appearance of an extra abdominal membrane, formed and organized by an undue secretion from the peritoneal vessels. In no other way can I account for the fluid found in the abdomen than as the consequence of previous enteritis; for the owner informed me she had been unwell a few weeks previously, which might very possibly proceed from the diseased ovaries; the extensive enlargement and disorganization of which might possibly have produced the diffused inflammation, which terminated in what I would term chronic ascites.

The spleen was congested, and shewed marks of inflammation.

The maniplus was completely stuffed with aliment betwixt every leaf. It was as firm as if it had been under the influence of a cheese press.

The muscular coat of the bladder was thickened, and the villous membrane shewed marks of inflammation. Its contents had the appearance of cream. The left kidney was much enlarged, and completely involved in the diseased ovaria: the pelvis contained something like pus. The right kidney was diminished in size, and of a blue cast, and firm in texture.

I scarcely know how to describe the diseased ovaries; they looked like a complete mass of what I may term organized pus, completely filling the pelvis, so that I was obliged to saw the bones asunder at the symphysis. On cutting into the substance it presented the appearance of a scirrhous gland. Here and there were observed abscesses containing a sort of pus of a yellow cast, and some small hard substances resembling tubercles, and covered with a dense case or capsule.

In cutting into the substance of the left ovary it presented a leaden hue. There were no remains of its original shape or structure. It was a complete scirrhous mass, and weighed above twenty-eight pounds. The functions of utero-gestation appeared to have been suspended for some time, for the fœtus was not larger than a young kitten, and the uterus contained an enormous quantity of the liquor amnii.

The contents of the thorax were sound, with the exception of the pericardium, the internal layer of which shewed inflammation, and there was a greater quantity of fluid than usual.

I can assign no reason for the diseased ovaries: the owner was only in possession of the cow a short time, and her history I cannot make out. In difficult cases of parturition the uterus is sometimes expelled, and suffers great injury before it is returned. Might this have been a cause? or had sexual intercourse any thing to do with establishing this singular case?

I am totally unable to answer these queries.

A CASE OF INFLAMMATION OF THE UDDER, AND HYDATIDS IN THE LIVER.

By Mr. J. Stoddard, *Richmond, Yorkshire.*

I was called in to see a cow on the 16th August. I found her lying in the middle of a field, in a dying state, and the case terminated fatally in about two hours afterwards. She was supposed to be labouring under a violent inflammation of the lungs.

On inquiry, I found that she had been unwell for some months, and had gradually lost condition. She was in an excellent pasture, and they had only milked her once in the day for some time, with a view to get her dry and feed her for the butcher.

Sectio cadaveris.—On opening the abdomen I found between two and three buckets full of serous fluid, of a dark yellow colour. The stomachs were full of aliment, and appeared healthy; but

the intestines shewed evident marks of inflammation. On making a section of the udder, it contained a large quantity of purulent matter, and was generally in a highly disorganized state. The kidnies were very much enlarged, and of an unhealthy character, and there was a great quantity of lymph thrown out in the pelvis of the kidney. The ureters and bladder were healthy: the uterus was very much contracted, and of a dark livid hue; but the os uteri was of a bright red colour. She had had nine calves, three times twins, and three times single, there being only one at the last time of parturition, which went blind soon after it was calved, and died. The liver was enlarged, and firmly adhered to the peritoneal covering of the diaphragm, and when taken out it was found to be occupied by numerous hydatids; one of the largest of which contained about a pint of transparent fluid.

The lungs, trachea, and larynx, were in a gangrenous state. The pericardium contained a large quantity of a bloody fluid, and the heart was enlarged, and of a very pale colour. There was also a considerable quantity of serous fluid in the cavity of the thorax.

This being a rather singular case, it is at your service for THE VETERINARIAN.

PARALYSIS OR RHEUMATISM.

By Mr. W. A. CARTWRIGHT, *Whitchurch.*

Dec. 7th, 1836.—Mr. ——— of this town, sent for me about ten in the morning, to see a pony of his, fourteen and a half hands high, four years old, and in good condition. On the previous day he had been brought up out of the field, about of the middle of the day, and remained in the stable at night, and seemed quite well. On the next morning, at seven, he was seen, and was then found to be standing, but quite unable to move his off hind leg forwards. He was left alone until I arrived, and I then found him in a similar state. I could discover no dislocation of the patella, or any thing the matter with him except the inability to bring the limb forwards; and when I tried to move him along he dragged it after him, and it was even at the full stretch behind him. He would not move it, on standing still, either to one side or the other; but on pressing on the inside of the thigh, he would lean almost over on the other side, and forcibly project the lame leg and quarter out sideways. It also seemed to give him a little pain on pressing upon him between the whirlbone and hip.

I took about three quarts of blood from the jugular vein, and

gave five drachms of Cape aloes, and ordered the stifle and hip to be well fomented, and that he should be kept quiet.

There was very little alteration on the next morning when he was first seen. At ten I saw him, and there was then very little improvement; but still in some of his movements there was an evident change, in a trifling degree, for the better, as he could move about in certain positions for a step or two sideways, though he still dragged the limb after him. I could detect no extra heat about any part, and he had feeling in the limb, as I ascertained by introducing a pin in front, just below the stifle. The fomentations were continued until about the middle of the day, when he was discovered to be as well as ever, excepting there was a little stiffness on moving about, and which left him in the course of a day or two.

August 25th, 1837.—This pony had a similar attack, in the same leg I think, but got well in the course of a day or so, after having been bled and physicked.

A case like it I sent you some years ago, and which may be found in vol. 1 of The Veterinarian.

[We have reserved a more lengthened and exceedingly valuable communication from Mr. Cartwright for the first number in the ensuing year.—Y.]

A CASE OF ILEUS IN A MARE.

Copy of a Letter from Dr. Henderson *to Professor* Dick.

Corstorphine, 20th Oct. 1838.

Dear Sir,—This case was attended by Mr. Cuningham, of Slateford; and as the mare belonged to a neighbour, in whom I took some interest, I frequently saw her, and, from the total absence of pain exhibited by the animal, was a little puzzled concerning the nature of her disease. I attended the dissection, and drew up the report immediately after. This disease, Mr. Cuningham says, is unknown among horses; therefore I thought it might be interesting to you.

I am, dear Sir, your's sincerely,

H. Henderson.

Ileus fatal in a mare; eight days' illness, without any prominent symptom except constipation and sickness. Pulse 80; latterly 90.

Dissection, fourteen hours after death.—Abdomen contained a great quantity of water, in which floated numerous loose flakes of

coagulated lymph, a few adherent; peritoneum, mesentery, and intestines dark, gangrenous, congested, tearing on handling; the intestines, large and small, enormously distended with flatus, except about three feet of the lower portion of the ileum, from the cæcum upwards, which was contracted and wrinkled into a thick cord-like form, terminating upwards in a short funnel-shape, where it joined the distended bowel. It would only admit two fingers, and was filled with yellow mucus; its peritoneal and mucous coats only slightly inflamed: on cutting them up the section was white. The bowels contained some feculent matter. The spleen was contracted, and contained depositions of lymph. Only one portion of intestine was adherent to the peritoneum, and that portion was gangrenous.

From the appearances I at once pronounced this, ileus.

It was curious to see so little marks of excitement in the paralized portion—the section white.

[For the opportunity of inserting this singular case we are indebted to Professor Dick.—Y.]

A CASE OF THE RE-ABSORPTION OF PUS IN STRANGLES.

By Mr. J. Hayes, *Rochdale.*

In the beginning of May 1837, a brown colt, of the roadster kind, three years old, belonging to Mr. Hurst, of Caldermoor near this town, began to have strangles in the ordinary way. Mr. H. poulticed the tumour between the jaws, and brought it to suppuration. He then opened it and discharged the pus; and all appeared to him to go on in the usual manner.

In about ten or twelve days, however, the parotid glands on each side began to enlarge, and speedily swelled to a very great size, so much so that it was with the greatest difficulty that the colt could swallow either food or water and he roared at each respiration very loudly. In this condition Mr. H. sent him to me. I rubbed the parts well with blister ointment, and in two days the tumours burst, and a little thin matter escaped. I enlarged the orifices, evacuated a great quantity of semi-purulent fluid, and inserted a seton through each gland. I kept on the discharge for twelve or fourteen days, and then let them heal, and all seemed to go on right, the colt having to all appearance got quite convalescent. In a few days he was turned out to grass, and had a feed of oats with beans every day.

On the 20th of June, Mr. H. came to me and told me that the colt was in a very bad way again, for, says he, "he is gone very thin within the course of the last seven or eight days, and gets weaker and thinner every day; he has also a very severe cough, with little appetite." He requested me to go and see him. I was astonished to find him wasted to skin and bone, and so weak that he could scarcely stand, and he straddled and staggered in attempting to walk. On applying my hand to his loins and along the spine, it gave him much pain. He shrunk in such a manner that it was with great difficulty we prevented him from falling; and, on turning him round short and rather quick, he fell on his side. On fully examining his loins, after we had got him on his legs, I perceived about the third dorsal vertebra, on the left side, a swelling, or, rather, the portion of the loin stood considerably higher than on the other side. He evinced great pain when pressed on this part. It could not be ascertained that he had ever received any injury there. The field in which he had been pastured was nearly a level one, with plenty of grass to feed on. He had never broken out of the pasture, nor had any thing been done to injure him that we could in the slightest degree suspect.

General symptoms.—His urine was evacuated not often, nor in small quantities, nor of a higher colour than usual, but he, every five minutes, stood stretching himself with his fore feet far extended from the hind ones, as if going to void urine, although none came—in my opinion, shewing evident signs of pain in the dorsal portion of the spine, or its immediate neighbourhood. The pulse was quick, but feeble,—quite characteristic of debility; the respiration moderate; but, if the colt was disturbed, then both the pulse and the breathing increased to an alarming degree.

Under and between the jaws, I found another small tumour about the size of a pullet's egg. On opening it a glairy yellow matter escaped.

I considered all these affections to be the result of the re-absorption of the pus or virus of strangles, as the small tumour proved plainly that it was the undischarged remains of the first attack, and which had not been sufficiently cleared from the system. I was also apprehensive that a deposit of the same nature had taken place, or was about to take place, in or near the loins or kidneys, and the cough seemed to prognosticate that the lungs were not altogether safe.

I commenced my treatment by inserting a large rowel between the jaws in the situation of the tumour, and I anointed it with blister ointment. I also applied a strong stimulating liniment (nearly as powerful as a blister) all over the loins once every day, placing a new sheep's skin over them, and would have inserted

a seton or two there, but the colt was in such a weak and low state, that I was afraid he would not be able to bear the whole at once. The sheep-skin was renewed twice a-week, which, together with the liniment, produced a constant and considerable discharge, that was kept up for three weeks. During this time he had a tonic ball every day composed of gentian, nitre, sulphate of copper, crocus of antimony, and camphor, beat up with Venice turpentine, sometimes substituting the sulphate of iron for that of copper.

After the first five days a little improvement was visible. On the 1st of July he was able to lie down, and rise of himself, and also to walk without danger of falling. Thus he continued to mend gradually in every respect. In the middle of July he was turned out to grass with one liberal feed of beans every day. He remained at grass in the daytime, and up at night, all the last winter and until June 1838. He was then taken up, worked gently for a short time at first, and now the owner rides or drives him the same as any of his other horses. He is in excellent condition, and fine in his coat, and appears as sound as any other horse.

Is this a corroborative case of the re-absorption of pus? a re-deposit, and again re-absorption, and final removal of the whole? Was it the stimulating effect of the continued application to the loins, and the rowel under the jaws, which acted as an outlet for the virus or essence of the disease; the tonics which were administered internally assisting the absorbents in again taking it up and conveying it out of the system? If you think this case worth recording in that ever welcome monthly visitor, The Veterinarian, it is quite at your service.

[This is a very interesting and satisfactory case of the re-absorption of pus, and the very peculiar and dreadful consequences of it. This too frequent and so long unsuspected cause of fatal disease, is now proved beyond the possibility of doubt. Professor Dick and Mr. Castley first directed our notice to the collections of matter in various parts of the frame which occasionally succeeded to farcy; but it is still more lately—and we are there indebted to a French veterinarian, M. Renault—that these secondary diseases have been traced to their true source, the re-absorption of pus. What important light does this throw on the proper mode of treating strangles and abscesses of all kinds—the hastening of the secretion of this fluid, and the full and perfect discharge of it!

The present case illustrates a singular point attending this absorption. The colt was sadly tender about the loins, and on

the left side there was considerable enlargement. Mr. Hayes suspects that there might have been pus here. There no doubt was, for this collection is occasionally found in parts in which no trace of irritation or injury can possibly be discovered. The molecules of the pus are found lodged between those of the healthy part, and there is no appreciable disease in any of the surrounding solids. There was nothing extraordinary in the parotid glands becoming the depositories of this pus: they were in the neighbourhood of the original abscess—they probably shared in the inflammation; but the loins, for aught that appears to the contrary, had never been previously diseased.

Mr. Hayes recalls our attention to a case of rupture of the stomach, recorded by him at page 615 of the last volume of The Veterinarian. He finds the stomach of a horse "almost decomposed and ruptured in many directions—he could not recognize more than one-half of its natural proportions or substance, and yet the horse ate well two hours before death."—This appears to him somewhat marvellous.

To a certain, but we own, a very inadequate, extent, we may be able to explain this:—In almost every case of rupture of the stomach that has fallen under our observation, the extent of laceration in the three coats of the stomach has been very different, and the appearances, after death, led to the suspicion that they did not always take place at the same time. In the peritoneal coat the laceration is much more extensive than in either of the others; and, if we may judge from its unhealthy and altered colour, it had taken place at some considerable period before that of either of the other coats. In cases of ruptured stomach we have more than once traced a plain and palpable rupture of the peritoneal coat, in certain parts when there has been only a disgregation of some of the fibres of the muscular coat, and the mucous membrane has been whole and sound.

The appearance of the rupture of the muscular coat is very different from that of the peritoneal. It is no clean and straight laceration; but the fibres have been disgregated and ruptured on either side of, and higher or lower on the principal chasm, and would very much resemble "the hung-like rags" which Mr. Hayes describes. The edges of this laceration will very soon present a sodden or half-putrified appearance. The extent of the opening through this coat, in the majority of instances, will not be one-half of that in the peritoneal coat. Supposing the stomach to have given way in two or three places, the extremely irregular edges of the muscular coat will not have been very unaptly described by Mr. Hayes.

Then the laceration through the mucous coat—there will rarely be any through the cuticular coat—will, from the peculiar construction of that coat, be very considerably smaller than in the muscular tunic; so that, notwithstanding all these shreds and patches, the openings for the escape of the food into the abdomen will not always be very extensive.

But suppose that they are so, then comes the admirable but mysterious provision of nature for the prevention of the escape of that into the abdomen which would produce great inflammation, or, probably, death. The stomach is occasionally perforated; but the liver, or the spleen, or the diaphragm, strangely oppose themselves to the chasm, and the process of digestion goes on undisturbed. Some intestine is perforated. A fold of the omentum, or some strangely directed portion of the mesentery, presents itself at the orifice, and prevents the abdomen from being deluged with extraneous matter.

But, after the stomach has been ruptured to a considerable extent, and its contents have been poured into the abdomen, the appetite will, to a certain extent, continue for awhile, and the horse eat and drink almost as before. In the "Abstract of the Proceedings of the Veterinary Medical Association" (page 108), a case in point is recorded. It happened in my own practice.—A horse, belonging to my old and valued medical friend, Mr. Millington, was in my stable on account of a severe pulmonic complaint. While something was doing to him, he slipped up and came down with great force. He got up, but it was easy to perceive, very soon afterwards, that some considerable mischief had been done. There was a strangely haggard countenance; the pulse was almost imperceptible; the legs were cold; the horse could scarcely be induced to move. A day passed, and the bowels had not been moved. I administered a dose of physic, *and it operated.* On the third day, the horse dropped, and died. On examination after death we found an extensive rupture of the stomach. *The liver had acted as a kind of valve.* Between it and the stomach there were several distinct layers of impacted food, and the stomach was still distended with food, for the horse had several times eaten a little hay and mash between the time of his fall and his death. The edges of the rupture had *the dull and sodden appearance of an old wound.* There was comparatively little fluid in the abdomen.

This was a case like that of Mr. Hayes, which will indeed comparatively seldom happen, but which are illustrations of a wise and benevolent provision against not merely trifling, but the most serious injuries of the organs especially connected with life.

I do not believe that the cantharides in the liquid blister had any thing to do with this laceration and decomposition of the stomach.

Mr. Wallis, in the present year, page 83, gives a very remarkable account of the rupture and decomposition of the stomach in a colt:—"There remained of the stomach a narrow slip only, which served as a medium of connexion between the œsophagus and the duodenum, and this was nearly decomposed." This animal drank some water, and ate a small quantity of bran-mash in the evening previous to the night during which he died.—Y.]

CASE OF DISLOCATION OF THE CERVICAL VERTEBRÆ IN A MARE.

By Mr. W. C. Spooner, *Southampton.*

Some months since, in January last, I was requested to attend a mare belonging to Charles Short, Esq., of Ampfield, near this town, Adjutant of the North Hants Yeomanry Cavalry, that a few nights previously had entangled herself in the halter, and had been lying some hours with the head bent under the body. The mare presented a very pitiable appearance. The head was considerably swollen in consequence of her being unable to raise it a foot from the ground, and the neck was bent round in the form of a half-circle. The transverse processes of the fifth and sixth cervical vertebræ appeared to be dislocated, or, at any rate, considerably stretched out of their natural position, so that the head would swing from side to side, the mare appearing to possess no power over it. She was excessively weak, and unable to walk, or even to sustain her own weight, so that it was necessary to support her partially by a sling.

Bad as the case appeared, I was yet induced to give a favourable prognosis, having been successful in a similar accident. There was considerable fever, for which the mare was bled, and otherwise treated; but I relied chiefly on mechanical treatment in assisting the muscles of the neck in bringing it again to its right position, for which purpose the head and neck were suspended from several different points, all bearing towards the convex side. By this means the head was elevated as high as the manger, and this, with a seton in the throat, soon lessened the swelling of which I have spoken. A piece of web was fastened round the face, another higher up, and a third portion round the neck. By having these several supports for her head, the mare was enabled

to ease herself by resting as she chose, now mostly on one and then on the other, and thus also the skin was secured from chafing. The weight of a horse's head is very great, and, I am persuaded, if I had not used these means, its gravity would not only have prevented the neck from assuming its right position, but would have caused a still greater curvature; and the mare would have sunk under the exhausting effects attending the unnatural position of the head, to say nothing of the consequence of such a great determination of blood to the brain as must have ensued.

I saw the mare again in about a week, and, although the owner still despaired of success, I could see an evident improvement: she could raise the head at least a foot higher of her own accord; she was stronger and more lively; and on moving her out of the stable, I found she could walk straight. The neck, too, I thought was somewhat straighter, and I felt satisfied that the muscles were acting as I wished. The same mechanical treatment was pursued; and, the next time I saw the mare, her amendment, in every respect, was very manifest; the neck was still more straight, and she could raise the head to the manger without difficulty.

The owner for some time past has used the mare as usual, both for harness and saddle; and the neck, though not quite straight when I saw her last, yet, in my opinion, bids fair in the course of time to become so.

Since the above has been written, the mare has gone through her exercises in the North Hants Yeomanry Cavalry as well as ever, and only the slightest appearance of the injury can be discovered on examination.

A SINGULAR CASE OF CONSTITUTIONAL DISTURBANCE IN A COW FROM FRACTURE OF ONE OF THE LUMBAR VERTEBRÆ.

By Mr. C. Snewing, *Coventry.*

On Friday, the 8th of June last, I was sent for to attend on a cow, which, on the 5th, was first perceived to abate a little in her quantum of milk, accompanied with some loss of appetite and a slight discolouration of the urine.

On the 6th, these symptoms were more aggravated, and the urine had now changed from the colour of brown sherry to that of blood. The aid of a cowleech was sought after and obtained. He administered one of his alleged infallible draughts,

which not having the desired effect, a second was given on the following day.

The cow still growing worse; the milk abating from two gallons or more per meal to two quarts; the urine having assumed a black colour; the appetite being nearly gone, and the feces in a pultaceous state, and often ejected with violent straining, the owner grew alarmed, and sent for me. I found the animal labouring under the foregoing symptoms, with the breathing quick; the pulse ranging from 120 to 130 per minute; and the beatings of the heart being as distinctly heard, and as accurately counted while standing at the door of the shed, as with the hand at the side.

On further examination I detected a fracture of one of the transverse processes of the lumbar vertebræ, which was unattended with any apparent pain when either pressed upon or moved; and which I was led to regard either as a chronic affair, or, from the absence of pain, if recent, to be attributed to a loss of vitality or mortification in the part.

I was now placed in a dilemma as to the treatment I ought to pursue. Am I to regard such a pulse as an irritable or sympathetic one, depending upon some local affection, as the fracture, &c.?—or is it occasioned by more direct disturbance of the sanguiferous system, arising from an obstruction to the passage of the blood through some vital organ?—or does it arise from actual disease—inflammation—of the substance of the heart itself? These were questions which suggested themselves to me. The argument or the inferences which I drew preponderated in favour of bleeding; and, with my ear to the side, I bled until I felt that the tone of the heart's action had subsided. I then stopped, and carefully watched the effect I had produced, and had the gratification to find (though this was a transient affair) that the pulse immediately lowered to 60 beats in the minute; but in the space of two hours it had resumed its former tone and number. I next proceeded to administer an aperient, composed of eight ounces of Epsom salts and half a pound of ginger. I administered an injection, inserted a rowel in the dewlap, and well rubbed the turpentine liniment into the loins three times every day*. This commenced at noon.

At 10 P.M. I found my patient nearly the same; the ears and horns were warm, and the muzzle wet. I repeated the purgative,

* In administering the drink, the white of the eye was completely brought into view, and I was forcibly struck with the strong resemblance it bore to the anterior part of the sclerotic coat of the eye in sheep that were affected with the *rot*.

adding twenty grains of the croton seeds powdered; and ordered linseed tea or water gruel to be given every four hours. I proceeded thus cautiously, because I did not know what medicine had been administered by the empiric.

9th.—Symptoms nearly the same; the appetite almost gone; yet rumination is not totally suspended. There is occasional grating of the teeth, and she lies down frequently. A great deal of tumefaction about the rowel, which emits a copious discharge. Take half a pound of Epsom salts, three drachms of powdered digitalis, and one ounce of powdered ginger; mix. A third part to be given in a quart of oatmeal gruel every six hours; the clysters and other treatment remaining the same.

10th, 8 A.M.—The appetite gone; rumination suspended; debility apparent; pulse and breathing the same. She continues to strain violently, although not so often; and the bowels are freely responding to the action of the purgative medicine. The urine is changed in colour from a black to a dark brown. The rowel has swelled enormously, and a copious discharge of serous fluid issues from it. Take of Epsom salts six ounces; powdered digitalis, two drachms; powdered gentian, two ounces; and powdered ginger, an ounce. Let a third part be given every six hours. The other treatment the same.

10 P.M.—The urine altered in colour from a dark to a light brown; the number of pulsations in a minute the same, but not so powerful; the straining has ceased, and also the grating of the teeth. The feces sometimes pultaceous, and sometimes watery: debility greater, and the other symptoms the same. Omit giving the third dose of the preceding medicine, and take, instead of it, extract of belladonna, half an ounce; powdered digitalis, two drachms; liquor. ammon. acet., eight ounces; and spirit of nitrous ether, two ounces. Give one-half of it immediately, and the other half twelve hours afterwards.

11th, 10 P.M.—Decidedly better; appetite returning; urine of its natural colour; and the quantity of milk, which hitherto during the disease had been about two quarts at a meal, has increased to five or six. The bowels still open, and the rowel discharging freely. Pulse lowered down to 90 beats in a minute, and feeble: other symptoms the same, except the presence of thirst, which until now had been absent. Repeat the last medicine.

12th.—Convalescent; appetite good; rumination returned; pulse 75; breathing quieter; urine of its natural colour; feces pultaceous; quantity of milk greater; while the animal is regaining strength, and the swelling in the dewlap subsiding.

Take of sulphate of magnesia, six ounces; nitre, two ounces; powdered gentian, two ounces; ginger, half an ounce; sp. nit. æth. one ounce and a half: mix, and give one-half immediately, and the remainder in twenty-four hours afterwards.

14th.—The animal apparently well, except that some weakness remained. Liberal diet.

July 12th.—I called to see my patient, whom I found in good health, and yielding her former quantity of milk. I found also that the fractured process had united.

THE DISCUSSION ABOUT DRENCHES.

By Professor Stewart, *of Glasgow.*

In the last Veterinarian, Mr. W. C. Markham has made some observations upon a paper which I published in September. In that paper I contended that it is dangerous to give draughts to horses, and that this danger cannot be entirely avoided. It is important to the veterinary surgeon that these two propositions be examined, and their truth or falsehood ascertained. If the first be true, we ought never to give a draught when a ball will do: if the second be false, we are liable for the price of every horse which our draught destroys. To illustrate the danger, I mentioned twelve instances. Eight out of the twelve patients died; the other four were saved. They were promptly put under treatment, and it was, probably, the treatment that saved them. None of the twelve shewed any symptoms of thoracic disease till after the draught had been administered.

Rather than let the subject pass unnoticed, I am willing to make some reply to the remarks of Mr. Markham. I do not think they need any; but I am in hopes that this paper may stimulate some other person, of more ability and more experience than Mr. Markham possesses, to consider what I have advanced, and either to dispute it or to confirm it. Mr. Markham does neither; and he writes as if he could not.

He says, he could not but feel sorry upon reading my paper, and that he is astonished and dismayed that I should strongly recommend all draughts to be given in glass bottles. I merely said, that "a strong wide-mouthed, smooth-necked bottle is better than a horn." I cannot yet see any thing strong in such a recommendation; and as little can I see any thing in it to excite "astonishment and dismay." Mr. Markham seems content to tell us what he feels; but he ought also to tell us what he thinks. He may be sorry, and astonished, and dismayed; but he should

have pointed out the strength and the atrocity of my recommendation. Nobody to whom I have shewn it has betrayed the least symptom of dismay.

The truth is, Mr. Markham does not understand the full force of the words which he reads, or which he writes: his own paper sufficiently proves that he is one of those who begin to dispute before they have learned to understand.

The next passage which Mr. Markham quotes is that in which I say, "Now, you are never to give a draught to any horse unless you think he will die without it." He does not inquire why I give this caution, but represents me as saying, "It is the fear of death which is to make us fly to the aid of medicine thus administered." I meant that, and said as much, If a draught be so dangerous as to produce death, nothing but the fear of death can justify the employment of such a remedy.

Mr. M. continues: "Now, suppose that I found my horse labouring under the effects of spasmodic colic,—even if I did not think that he would not die, but that I would relieve him of a considerable portion of his pain, would I not immediately give him a drink?" This is all he says about the passage to which he refers. I am left to suppose that, in such a case, he *would* give a drink, and that therefore every body should do so. If he would do it, it must be right, and he must act accordingly; but, to prevent mistake, Mr. Markham had better tell us what he means by the *effects* of spasmodic colic: at the same time he may tell us if he really would give the drink, for I do not know enough about him to answer his question correctly.

Mr. M. proceeds to another assertion which I made. I said that "the safest way of giving a draught is to administer it when the horse is lying, as he mostly always is in the cases which imperiously demand a draught." In this sentence I assert two things, each quite distinct. Mr. M. makes no separation; and I am at a loss to perceive which of the two he aims at. He says, "Now, Mr. Editor, I am sorry for this; for the time is arrived when the whole agricultural portion of the country is looking up to the veterinary profession, and watching its every movement, while the amalgamation between veterinary and agricultural science is effecting." The man must certainly be of a very sorrowful temperament. There is nothing here to set anybody a-crying. But though he were brimful of sorrow, and could shew that he had cause to weep, that would be no argument against the truth of my position. I believe it will remain as true as ever, whether he be sorry or glad. If he mean that he is sorry to read it, because he thinks it false, he ought to have shewn where the falsehood lies: when he does that, we may, perchance, be disposed to

sympathize with him. But to grieve is not to dispute. As for the amalgamation of which he dreams, I do not think it will materially affect the truths of science. Whatever watching, movement, and amalgamation may occur among agriculturists and veterinarians, it will still be true that the safest way of giving a draught is to give it when the horse is lying, and that he generally is lying when no solid medicine will relieve him.

In the remainder of the paragraph from which the last quotation is made, Mr. M. talks as if I had said that no horse is dangerously ill so long as he stands. He will find no such assertion in any of my writings. This is but another instance of his misunderstanding. It is known almost to every groom, as well as to Mr. M., that the horse often dies standing. But in such diseases a ball will save his life as certainly as a draught; and I contend that he who gives a draught when a ball will do, is answerable for the horse if the draught either kills him or makes him broken-winded.

Mr. M. then quotes the first five cases. He puts some of the words into italic letters, and in one place cries "*Mind!*" as if he were pointing out something very important; but he finds no fault with the detail. He is neither sorry nor dismayed; but he again asks a question: "What," he demands, "has the Professor proved by these cases? Certainly not that the drinks destroyed the horses." But, if not the drinks, what was it? "They were shamefully and cruelly neglected, and, in consequence of that neglect, they all died." They were neglected; that is to say, they got little or no medical treatment. It was certainly wrong for the owners to neglect them; but, if the horses had got no draught, they would not have required medical treatment, at least not for chest disease. That death took place proves the danger of draughts; that some were saved by prompt treatment, proves that death is not inevitable; but still it is a great evil, even when the treatment prevents death.

I am now, I expect, done with Mr. Markham. Judging from the manner in which he writes, I presume he is not a veterinary surgeon; and though I write letters for students, I do not think it would be useful to argue with them. They do well if they listen till they understand, and, after that, they must get some experience before they attempt to dispute.

I am of opinion, however, that this subject is not exhausted, and beg to submit the following points to the consideration of *experienced* veterinarians:—

1. That draughts, particularly when pungent or disagreeable, are dangerous.

2. That by no care can the danger be altogether avoided.

3. That no draught should be given unless the horse is in danger of dying without it.

4. That the safest way of administering draughts is to give them when the horse is lying.

5. That a draught is seldom or never absolutely necessary but in diseases which make the horse lie.

6. That a bottle is a better drenching instrument than a horn.

INSURANCE OF HORSES, CATTLE, &c.

In the last volume of The Veterinarian (p. 499) we hinted at the establishment of an assurance society against the losses, and occasionally very severe ones, sustained by the death of horses, cattle, sheep, &c. It was stated that such a society had been instituted in France, and, so far as it could be at present ascertained, had been satisfactory. *La Zooïatre du Midi* gives a more recent account of its proceedings, of which the following is an extract:—

"La Tricéphale (the name of the insurance) has far exceeded the expectations of its most sanguine well-wishers. In the first year it effected 262 insurances; 1062 in the second year; 2252 in the third; and, already, 3740 in the fourth. These assurances amount to three millions (of francs) for horses, two millions for cattle, and five millions for sheep."

The assurance extends, generally speaking, to every kind of death, natural or accidental, and also to maladies and accidents for which it may be necessary to destroy the animal. The rate of assurance will necessarily vary considerably, according to circumstances: the following is the lowest scale of insurance:—

Horses.

	Per cent.
Post and coach horses, and horses on the canals	6
Gendarmerie, and horses for luxury and not for commerce	2
Agricultural horses, and horses for commerce as well as luxury	3
All other risks and professions	4

Cattle.

Milch cows	10
Oxen employed in agricultural or other work	4

Sheep.

Rams, ewes, wethers,—all sheep above a twelvemonth old	4
Lambs from three months to a twelvemonth	8

Some persons have imagined that this assurance would prevent the farmer from taking all proper care of his cattle and sheep,

and having recourse to veterinary assistance. The company, however, means to take proper care of their stock in health and disease, and offers its assistance for destroying the influence of empirics of every description.

We confess that we want farther information on this interesting subject, although we have no kind of doubt that such an assurance may, at some future time, be established on terms equally satisfactory to the assurers and the assured.

THE VETERINARIAN, DECEMBER 1, 1838.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

The session of 1838-9 commenced at the Veterinary College on the 19th ult. Professor Coleman looked in much better health than at the close of the preceding session, and, occasionally excited by his subject, gave us manifest and pleasing proof of more considerable bodily and mental power than many of us can hope to possess at so advanced an age. The lecture commenced with the usual history of the horse, and the same rapid but talented sketch of the structure and functions of the foot. He then proceeded to offer some advice to the student on certain subjects connected with his studies.

As to comparative anatomy, he said that he had been shamefully misrepresented in what he had been accustomed to say on this point; and, as there was now pretty plain, and, afterwards, direct reference to the writer of this article, he must be forgiven if, without violation of all due courtesy to his accuser, he endeavours to set this matter right.

Not many years ago Professor Coleman was accustomed to devote a portion of his lecture to a direct attack on the study of comparative anatomy. He used to say, "I *dislike* comparative anatomy, for it leads to comparative physiology, and to comparative pathology, than which nothing can be more mischievous." We never could understand the meaning or the object of the Professor; but we saw the effect of it in the conduct of the pupil, and in the manner of conducting the labours of the dissecting-

room. There was no comparative anatomy. The horse was the only study of the pupil; and he neither wished nor dared to extend his researches farther.

The Professor was remonstrated with on this point, and his language was more guarded. He warned his pupils that comparative anatomy might dangerously mislead them—that where similarity of texture and of structure existed, the student might too hastily take it for granted that there would be similarity of disease, and similarity of effect in the remedial measures adopted; and that there was often an almost inconceivable difference in different animals, in the diseases to which the same organs were exposed, and the effect of the same medicines. Had the Professor added that he was warning them against the *abuse* of comparative anatomy, and not against the guarded study of it, there could have been no objection to this; but not having done that, the effect produced was the same on the mind of the pupil and the inquiries of the dissecting-room.

A few years, however, stole on, and the enmity to or the dread of comparative anatomy returned, and the language of Mr. Coleman was more unguarded and violent than ever; for he said in plain language, that, "different as was the structure of the various organs in animals and in man, and varying as they did in the numerous classes of animals, the student might be misled by analogy, but *never could arrive at any legitimate or useful conclusion.* The diseases of the different quadrupeds were essentially different. It was impossible to predicate the symptoms, or what should be the treatment of one animal from what we knew of another; and comparative anatomy was too apt to lead on to comparative physiology, and comparative pathology." This I suppose is the misrepresentation of which the Professor complains; but *these were his identical words.* For the truth of this I* appeal to any or to every student who heard Professor Coleman's introductory lecture in 1836.

Having made this triumphant attack upon his opponent, the Professor accuses him of having *anonymously slandered him.*

* For evident reasons I drop the editorial *we,* and speak in my own person.—Y.

Now, confessing that for every communication which does not bear the name of the author I am answerable—(I do not, however, believe that there is one),—and that for every leading article also to which the initial D, or K, or P is not appended, I am answerable, and acknowledge it to be mine (and every reader of THE VETERINARIAN has long understood this), *I publicly call on Professor Coleman to prove the charge which he has brought against me.*

The Professor follows up his attack, and gives his foe no rest or quarter. "I have been told," says he, "of letters received from those who have been sent into the country uninstructed in the diseases of cattle and sheep, that would make one's heart bleed. I should like to see one of these heart-bleeding or heart-breaking letters. I acknowledge that I have not any compunctious visitings about the matter."

In a private conversation with the Professor, and when I was speaking to him of the injustice of sending a young fellow into the country totally ignorant of the diseases of the animals that would form a considerable proportion of his patients; and the disgrace, and loss of practice, which he would inevitably sustain, Mr. Coleman was disposed to laugh at me. I told him that I had letters in my possession which would make his heart bleed. He sneered at me then, and he now repeated that sneer in his introductory lecture. I will reply in language which I used many years ago, and then not labouring under any feelings of irritation. It formed part of *my* introductory lecture in 1828. "I never met with a veterinary surgeon in the country who did not express his deep and bitter sense of the inconvenience he had felt, and the loss he had sustained, both in reputation and emolument, from being sent into life ignorant of a very important part of his practice. During the course of his veterinary education he had heard little or nothing of the diseases of cattle, the symptoms by which they are distinguished, the causes by which they are produced, or the treatment which they require. He has just arrived at the place of his destination. A wealthy agriculturist, whose good opinion it is of the utmost importance for him to acquire, calls upon him. "A sad disease has broken out in my dairy," says he, "and I have lost several valuable beasts. I

wish that you would come, and tell me what is to be done." Poor fellow! What shall he do? Shall he boldly face the danger? He will at once be detected as a mere pretender; and if he is found a pretender in the treatment of cattle, his knowledge of the horse will be more than doubted. He will derive no more assistance than is absolutely necessary from the servants. They view him as an intruder on the rights of the old farrier. The master, the servants, perhaps the farrier snug in some corner, are looking on. Shall he candidly confess his ignorance? The farmer may appreciate his candour, but he will think slightingly of him and the school whence he comes. 'Give me the old farrier,' will pass in his mind, if he does not plainly speak it out. The horses will, in all probability, soon follow the cattle; and the veterinary surgeon will be consigned to derision and contempt. Is it not cruel to place a young man of principle and of feeling in a situation so painful and degrading?"

From practitioners thus situated I have received many letters containing statements like this, and that *would make any man's heart bleed.* But no, said Mr. Coleman—and almost in so many words—in the introductory lecture of the 19th ult.—the pupil is not sent away thus unarmed. He has been taught the laws of health and disease. He has been trained to the observation of symptoms—he can connect certain symptoms with the presence of certain diseases—he can draw a tolerably satisfactory conclusion—he knows the usual medicines of cattle, and he can pretty well guess what should be done: or, *if he should err in the first case that comes before him, he will know better another time.*

I will not ask how far this is consistent with the tirade against comparative pathology, and the impossibility of drawing any satisfactory conclusion from it. I will not ask *how far it is consistent with common honesty;* but I will pass on to a pleasanter subject.

When speaking of the extension of the knowledge of the pupil, and the introduction of demonstrations of the anatomical structure of domesticated animals, he stated that "it was possible that buildings might be erected within the College walls for this purpose, and that he would contribute to the best of his power to follow out the plan suggested by the English Agricultural

Society." I wish that there had not been a damper immediately following this, viz. that "he must be forgiven if he feared that the scheme would not answer so well as the Society expected." If the Professor will kindly convince the Society of this, they will go elsewhere.

Grateful, however, for the concession which the Professor has made, *and if he does devote himself to the accomplishment of the purposes of the Society,* the writer of this article pledges *himself* that, neither as Editor of this Journal, nor as Chairman of the Veterinary Sub-Committee of the Society, will he do any thing to annoy: but, rather, will he try to propitiate, and to please and to hasten the arrival of that period when they may be fellow-labourers in the promotion of a good cause. But the anonymous slandering? Why! in such case, it, and something else, should be considered as a *misconception* both of meaning and of fact, or should be no more remembered. Y.

We are proud to know that our Journal has found its way to the German continental schools, and is held in some estimation by them. Herr G. W. Schräder has published in the Berlin Veterinary Journal an analysis of our number for March last. We cannot resist the temptation of copying his introductory remarks. We should not have dared to have written what he has kindly said of us and for us. We thank him; and some of our readers—some intimately connected with us, and for whom we feel the truest esteem and the warmest gratitude—must not, will not be offended.

"In spite of many annoyances and many attempts to impede its progress, or do away with it altogether, this periodical has, by the prudence and talent of its editor, Mr. Youatt, nobly maintained its ground; while "The Farrier," "The Hippiatrist," "The Centaur," and other works of a similar tendency, have been long since forgotten. Until the fifth volume, Messrs. Percivall and Youatt were the sole editors; and then Professor Dick, of Edinburgh, and Mr. Karkeek, V.S., at Truro, were added as co-editors. But it does not appear as if they gained much assistance by these gentlemen; for it is but seldom that we find any thing of their's in the numbers; and the communications

from other fellow-labourers in the veterinary profession sometimes were very sparing and scarce, and Mr. Youatt was obliged to incite them to industry. It is really no small undertaking to produce from four to five sheets full of novel and interesting matter every month at a given time. On this account Mr. Percivall found it necessary to commence with monthly papers on the anatomy of the horse; and Mr. Youatt followed these up by his lectures on domesticated animals. By these means they had always an interesting subject in each number, and their writings served to make them, every month, more known and more justly appreciated. It is to be wished that some of his London fellow practitioners would give the present editor more assistance; for they must, without doubt, have many opportunities of making interesting and valuable observations. But how often does it happen that a prophet is least heard of in his own country!

"In the leading article in No. 123, for March 1838, we find that the editor expresses the hope of being able speedily to establish a correspondence in the very heart of Germany. We cordially second this wish. We would have a free, a friendly intercourse between us—pleasing, useful, and honourable. Our veterinary literature is almost unknown in England; and the English literature, until lately, was unknown here. Both of us too often think that we have made some discovery, while the same thing has long been known among our foreign brethren."

Magazin für die Gesammte Thierhielkunde, 1838, p. 384.

With cordiality, and with many, many thanks, we accept the friendly challenge of our continental brethren. Our good wishes, our mutual esteem, our successful labours in our common cause—may every revolving year witness their stability and their increase! Our brethren abroad, and from all parts of the continent, occasionally visit our island: under what obligation would they lay us, if they would give us the opportunity of telling them, personally, in what high consideration we hold them!

We trust that our readers will be gratified by the improvement and increased value of the future numbers of THE VETERINARIAN. Our staunch and kind contributors will enable it to maintain its ground as long as it deserves their support.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

The Oracle of Rural Life, or Almanack for Country Gentlemen, Sportsmen, Farmers, and Gardeners, for the Year 1839. A. Baily & Co., Cornhill.

This is one of the most interesting as well as useful little books of the kind that we have seen. As each month passes, first comes the Almanack, properly so called, with the Sunday's proper lessons; to this follows an account of the proper farm-work to be done, contributed by Nimrod; and then the cares of the Kitchen and Flower-garden, by Mr. Warden, formerly the editor of the "Farmer's Journal." These are given with great minuteness and accuracy. They contain all that the amateur can want to know, and will be read with interest by the more practical man. Next comes, and one of the most pleasing features of the work, a short but graphic sketch of the Field Sport then most in season, oftenest from the pen of Nimrod, but occasionally contributed by Tom Oakleigh. A short but useful Miscellany succeeds, and afterwards a list of all the fairs in the kingdom in that month, with the commodity to which they are chiefly devoted.

At the end of the book is given a list of the packs of hounds, of every description, kept in England, with the name of the master and the locality of the kennel; and also a list of the horses entered for 1839, for the Derby, Oaks, St. Leger, and Goodwood sweepstakes. The whole concludes with the usual information with regard to stamps, duties, and assessed taxes, and a list of the Queen's ministers.

As a specimen of the sporting sketches—each of which is illustrated by a spirited and well-executed engraving—we give that of Steeple-Chasing, by Nimrod. We select it for the true old English sporting feeling, and the feeling of humanity, too, which it breathes:—

"There has been a great rage for what is called Steeple Chases within the last ten years; but we think it is now rather on the decline. Several objections, and some weighty ones, have been raised against them. In the first place, they are deemed cruel towards horses, who could never have been intended to go four miles, at their full speed, over ground of every description, intersected with fences, and this under much more than common racing weights. This objection is borne out by two striking but well-known facts:—First, four-mile heats are now almost entirely

done away with on race-courses, out of a feeling of humanity towards the horses. Secondly, the number of good horses which have fallen a sacrifice to their exertions in contests of this nature, clearly shew that we are trespassing on the powers of a noble animal beyond what his nature can endure, and far beyond what our dominion over him justifies. Again, the practice of steeple chases meets with disapprobation from several distinguished sportsmen. They contend that, in addition to the objections already stated, it is likely to operate against the more legitimate sport of fox-hunting; and this in various ways. It causes farmers to complain of injury done to their land, which they would overlook in the case of hunting; and it has been found to create a jealous spirit amongst followers of hounds, very prejudicial to sport. It has likewise opened a door to fraud, by having horses placed in the race by a previous understanding amongst their owners; is a prolific source of wrangling, and has been chiefly profitable to horse-dealers and black-legs. It must, nevertheless, be admitted, that a steeple-race over a good country, and one which will admit of its being seen from end to end, is an exceedingly interesting sight, although not divested of anxiety for the fate of the horses or their riders. A peculiar style of horsemanship is considered necessary for it, not every day to be met with. Independently of undaunted courage, the steeple-chase rider must have these qualifications:—He must have a cool head and a very quick eye; the first, to prevent the possibility of mistakes; the next, to enable him to make the most of his ground, and to observe with minuteness the situation of his various competitors in the race. The most eminent of this class of riders are Messrs. Becher, Powell, Mason, Oliver, and Sadler. Horses intended for steeple chases require a system of training somewhat different from the race-horse. They require a series of long-continued work to give full force to their muscles; but they must not be deprived too much of their flesh, nor 'drawn too fine,' as the racing term is, by sweating, forasmuch as the weight they carry is far above racing weight, and good flesh is strength.

"Two of the most conspicuous steeple-chase horses of the last few years were Grimaldi and Vivian, both of which were sacrificed to this, by some considered as miscalled, diversion. Grimaldi dropped down dead under Mr. Becher, just after running his race, having burst a bloodvessel in his stomach, near the region of the heart. Mr. Wardropp, surgeon to George the Fourth, obtained his heart after a post-mortem examination, and found it of unusual dimensions. In the Daventry steeple-chase of last year one horse was drowned, and another died from exhaustion immediately after the race."

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